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Five Ways of Hiving Package Bees

By Alfred Pering,
Florida.

HAVING recently received and hived a few packages with queens, an account of a number of ways of managing them in getting them out of the cage and onto combs or foundation may be of interest. All of these methods were successful.

No. 1.—The package was placed below the combs in the brood chamber and when the bees were liberated, the brood chamber with the combs was placed over the package cage. I use the deep hive so the cages were not tall enough to set up high in the hive body so the bees might crawl at once up onto the lower edges of the combs. So I elevated the cage with blocks until the top of the cage was within a bee space of the bottom bars of the combs.

This method of hiving has the following objections: The cage has to be elevated the right height. The bees should not be disturbed for five days, since they are not accompanied with their own mother and might ball and cause a loss of the queen. The empty hive body below causes a long crawl for the bees as they make their way to the outside. The space is also not conducive to retaining warmth at the time of year the packages are received.

The lower brood chamber must be removed and it is easier to remove when it is above than it is from below. My most serious objection is, that in placing the queen cage for introduction, I much prefer to place it on top of combs rather than down between them since it is so much more easily removed without disturbance. When on top it may easily be picked up with little chance to cause balling of the queen. However, with this first method, if the weather is a bit cool, in placing the queen cage on top, it is too far from the

bees in the shipping cage below and she may chill before they find and hover her.

I want all the attendant bees removed before introducing so the queen has little chance to protect herself from the cold until surrounded by bees from the package. Otherwise, this method of handling the packages works nicely.

No. 2.—The cage is inverted over the combs so the bees as they leave come immediately upon the top bars. This necessitates propping the cage up or leaning it to one side so the bees may spread themselves out over the tops of the combs and reach the queen cage, also placed on top of the combs and near the package.

The trouble with this method is that when the bees are liberated it is difficult to prevent mashing them in getting the cage into position and bees fly too easily. It worked and I liked it better than No. 1. It is too difficult to keep everything covered snugly from cold and not kill more bees than I like to.

No. 3.—Then I tried vigorously shaking the bees out on top of the combs after placing the queen on top also. This was quick work. The bees did not fly very badly when gorged first with plenty of syrup or thin honey. This feeding or gorging should be done in any case at the very start. If there are no bees flying nearby from other hives, the bees from the package will not stray away very badly.

The top of the hive may be covered with several thicknesses of cloth to keep everything warm, and then too, no extra hive body is needed to cover the shipping cage while the bees are getting out of it. This plan worked nicely.

No. 4.—This is the best one. I like

it because I do not allow a single bee to escape nor do I kill any. The package bees were received from a shipper who makes an opening in the top right next to the feeder can, the right size to admit the queen cage which is inserted endwise into the package cage.

The queen cage is prevented from falling or down into the package cage by having a piece of tin too large to pass through the hole nailed to the end of the queen cage, suspending it in the top of the package.

The reader of this article will find a description of this manner of placing the queen cage, as suggested by the writer, published on page 279, American Bee Journal for June, 1935. This manner of suspending enables the receiver to remove the cage and not allow a single bee to escape if the operator is careful.

The old way of suspending the queen cage by a wire and having to lift the cage out with all the bees on it will carry up some bees however hard one tries to get them all off and it allows many other bees to take wing or crawl out before the cage may be gotten free and the opening closed.

In this fourth method after I had removed the queen cage, I slipped a piece of tin about the width of the top of the shipping cage under the end of the queen cage before lifting it high enough for a bee to get out. I then lifted out the feeder can and slid the piece of tin on under this, thus removing both queen cage and feeder without a single bee escaping.

Those package shippers who use a feeder can with a cloth top, should trim the edges of the cloth off close to the can, so it will not be difficult to remove the can and prevent the

escape of bees which try to cling to it as the tin is slipped under.

Having removed the feeder can and the queen cage and the two openings having been closed by the piece of tin, the attendant bees are now removed from the queen cage and the cage placed in position on top of the combs, wire side down.

Then, holding the tin covering so it would not slip off, the package cage is placed on its side with its opening close up to the queen cage. Now with the hive cover in hand, quickly remove the tin, covering the openings in the shipping cage, give the piece of tin a quick shake to dislodge any bees that may be clinging to it, slap on the hive cover over the top of an extra super or hive body.

In this way the bees, as they come out, will almost immediately contact the queen cage and find their queen, to cluster quietly over the cage and keep her warm and proceed to eat out the candy and finally release her.

At the end of five or six days, the empty shipping cage and the queen cage are easily removed with the least disturbance and much less danger of causing the queen to be balled.

This is the plan I like the best.

Not because I am inclined to be timid or dread the possibility of being stung, but I regard it as the safest handling to prevent the possibility of losing the queen from disturbance, while removing empty cages.

Too many queens are superseded after hiving packages to add to the risk of balling while introducing the queen that comes with the package. To make loss still less likely, put off examining the combs to see if the queen has begun to lay just as long as you think it is safe to do so.

No. 5.—This is the method probably most often practiced and advised by many shippers. Place the package down in one side of the brood chamber, fill the balance of the space in the hive with combs or sheets of foundation and then release the bees.

This is not a bad plan. However, there is disturbance when the cage is removed and the space occupied by the shipping cage is filled with the required number of combs to give the hive its full quota.

Let me say finally, that it is good management to feed the package bees after they have been hived a few days, whether there is a honeyflow or not. The package will repay you for the boost.

Buying Directory which was published in the February 3 issue of that magazine. This directory has a wide circulation among bakers.

Contest Recipes—Tested and Tasted

The Institute Testing Kitchen has been the scene of much activity these past few weeks. The hum of the electrical mixer, the whir of egg beaters, the snip-snip of kitchen scissors preparing fruits for fruit cakes, the bubbling of boiling candy, the soprano tone of the flour sifter composed quite a kitchen symphony which was interrupted now and then by an "oh my goodness" from the "engineer." The cause for all this activity was the thirty recipes which won prizes in the Second National Honey Cookery Contest.

After producing drop cooky batter as thin as cake batter and brownie batter so stiff that when baked, it was much too hard and dry, we would like to give you the "high sign" so that you can pass it on to those you interest in entering the contest. This year our rules state that no prizes will be awarded until after the recipes have been tested. The rules are given on page 15 of the Annual Report. Extra copies of the rules and also a list of prizes will be sent upon request. Wouldn't it be a good idea if our beekeepers would give these rules to interested homemakers and suggest that they:

1. Select at an early date the items they wish to enter.

2. Observe closely the results obtained each time these items are made between now and the time for the contest and that they attempt to perfect the product if need be.

3. Be sure all measurements are level. That flour is sifted before measuring and placed lightly into the measuring cup.

These are seemingly little things but they make a big difference in the success of the finished product. Accurate recipes will help us materially and bring the prizes to the winners in "shorter order" after the close of the contest. As a result of our experience in previous contests, we have been able to develop a plan whereby the recipes will be tested immediately after the contest.

It's TOPS in Spring Honey Recipes

If honey is to take its rightful place among the staple foods found in homemakers' kitchens, we must suggest the use of honey all through the year. What are you doing now to keep your customers honey conscious? Do they know of the latest honey breads, cookies, honey and fruit combinations and how they may be used in the daily menu? The Institute's latest recipe leaflet gives you this information and is available to members at the following prices:

American Honey Institute NEWS NOTES

How Do You Feel About Changing National Honey Week Dates?

PERHAPS you did not read about the proposed plans for National Honey Week this year. On pages six and seven of the Annual Report (all Institute members received a copy) the new plan is outlined and a definite program given. A Spring National Honey Week should aid in preventing an overloaded fall market, thus reducing the tendency toward price cutting. However, unless sufficient beekeepers reserve ample stocks of honey, a Honey Week at that season cannot be successful.

Will you please read this article in the Annual Report and let us know just as soon as you can whether you will or will not cooperate? We would appreciate too, having you give your reasons for the decision you report.

"A Bee Line to Flavor"

That is the title of the honey article prepared by your Institute for the April issue of "The Hostess," a very attractive recipe leaflet published by Sprague, Warner & Company, Chicago, and distributed each month throughout the United States to Food Specialists and to homemakers especially interested in Richelieu, Fern-

dell and Batavia quality foods. Due to the Institute's contact with the Home Economist for "The Hostess," honey recipes are found periodically among her releases. Try to get a copy of this helpful leaflet at your local grocer's (he will have it if he sells Sprague-Warner products) so you may see how tempting the Institute's honey dishes look when illustrated.

Commercial Honesty

The inclusion of honey recipes and honey publicity in all types of food magazines is no longer surprising—such copy appears regularly.

BUT, when the Editor of "Hiking and Camping Forum" in the March issue of Nature Magazine stated that "A folder, 'Honey Helpings' is refreshing for its commercial honesty," we feel it is a real accomplishment. He also suggested that honey had a real place in the camp commissary. Incidentally, we have received several requests for "Honey Helpings" since this article appeared.

Honey in a Buying Directory for Bakers

All beekeepers interested in selling honey to bakers will profit by the courtesy of Bakers' Helper, who listed American Honey Institute in its

50 copies	\$ 1.00
100 copies	1.75
250 copies	4.00
500 copies	7.00
1000 copies	12.00

Sample free upon request.

The following recipe for Pineapple Bread is bringing many favorable reports and illustrates the seasonal character of this new release. Besides its excellent flavor and unusual keeping qualities, the bread utilizes left-over pineapple juice all too often not conveniently used by the home-maker because of lack of variety of uses for it.

Honey Pineapple Bread

1 egg
2 tablespoons fat
1 cup honey
 $2\frac{1}{4}$ cups all purpose flour
1 cup pineapple juice
1 cup All-Bran
 $\frac{3}{4}$ cup nut meats
3 teaspoons baking powder
 $\frac{1}{2}$ teaspoon salt

Blend shortening and honey. Add

egg and beat well. Sift together the dry ingredients. Take out about one-half cup and mix with the nut meats. Add about half the dry ingredients to egg and honey mixture and incorporate well. Add all-bran and pineapple juice, incorporate and add remaining flour and then the nut meats. Pour into a well greased loaf pan, the bottom of which has been lined with wax paper. Bake in a moderate oven (350 degrees) for one and one-fourth hours. Yield—1 loaf.

Five Year Pledges

Those of you who received a copy of the annual report noticed the inclusion of a pledge card based on the five year plan. If you are not acquainted with this plan, it is briefly this: In order to plan and carry out an efficient program to the advantage of our members, we are asking you to pledge your membership on a five year basis. This gives us a foundation upon which to build. We feel that if beekeepers realized how difficult it is to try to plan and put into

effect a honey publicity program that will bring them the largest returns without knowing from one month to the next what the income will be, they would consider a little more seriously their pledge to the Institute—their publicity agency.

If you have already made a five year pledge do not send in card received with your annual report but if you have not, will you please try to estimate a membership to be paid each year for a period of five years? Help us to help you.

Recipes Wanted!

We are planning a new canning and preserving release and would like to include canning recipes that are favorites with your family and your customers' families. Will you pass the word around that the Institute would be very grateful to receive recipes for canned honey fruit sauces and the method used. The Institute will test them and pass them on. We have found that Mrs. Jones is always interested in a recipe that Mrs. Smith has found successful.

IBJ

An Inexpensive Honey House

By J. C. Elliott,
Kansas.

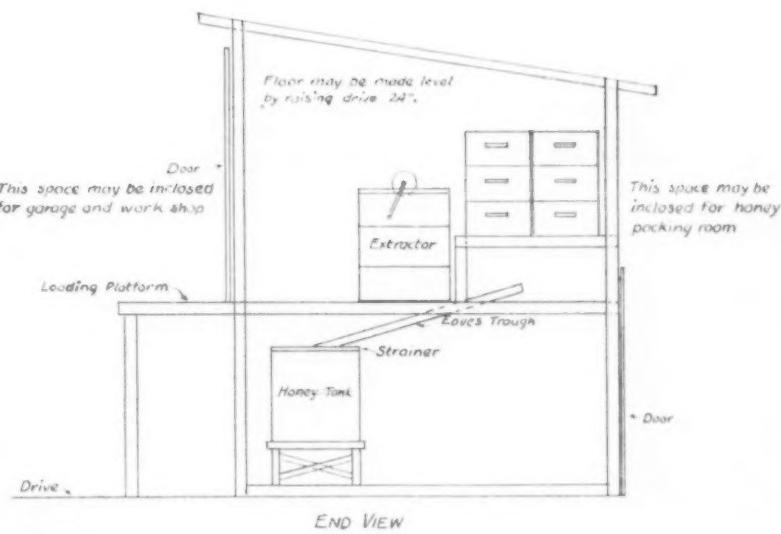
(Illustrations redrawn by Roy Grout)

THE mention of honey houses in "All Around the Bee Yard" has caused me to think beekeepers might be interested in my experience. The least expensive honey house I ever had was a screen wire affair covered with a canvas roof. I believe this house handled 40,000 pounds of honey in a single season. That was in east Texas and there they have several flows and extract frequently.

A neighbor to the beekeeper in this experience spent a good share of a winter and four hundred dollars, building a fine house, and the next year had a flat failure.

Another beekeeper built his honey house on a lot in town so it could be converted into a dwelling with little expense. The drawback to that plan is that the interest on the investment and taxes may be more than one can afford to pay for the use of it as a honey house and it may be that such a building will not be as convenient as one built for the purpose of honey handling.

The term "honey house" often covers a multitude of uses. It may merely be the place where honey is extracted or it may mean anything up to a place to house a car and a truck or two, all of the equipment not in use, the honey, a packing and

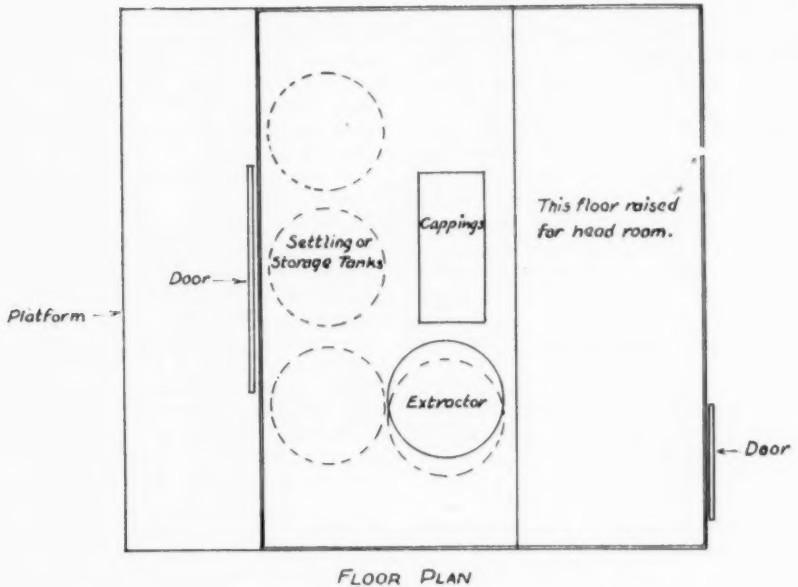


shipping room and cellar wintered bees. Anyone who expects to build such a plant with the expenditure of a little money will be disappointed.

When I was considering building a honey house, I wanted to get away from the old snail route of handling the honey from the extractor to the tanks. I had the bucket under the extractor faucet run over often

enough. I knew that a pump was out of the question for me.

I solved the problem by placing the extractor on a platform above the honey tanks. The extractor faucet is never closed, and the honey is conducted to the different tanks by a length of eaves trough, which is fixed so it may be easily changed from one tank to another. The tanks have tele-



scoping lids, that may be removed and a strainer basket placed on the top of the tank. With a faster extractor, the strainer would have to

be speeded up some.

This plan of having the extractor above the tanks makes for lower construction costs. The same roof covers both the extracting and honey storage room. In the sketches, no room is allotted for comb storage. In this part of the state, not much equipment is needed as the flows are short and as the winters are warm a lot of the combs are left on the bees. Storage required will depend on location. Since building my house I have added some room for storage and packing honey.

The first part of my house cost twenty-five dollars. Large areas in the walls were just screen wire. Later I made windows for these places using glass cloth.

In building a house like this a person could take advantage of rough ground and have the driveway along the loading platform, higher than the ground floor of the house inside. Unless something like this is done, there will not be enough head room to stand under the platform where the honey tanks are.

ABJ

Improved Production

By Edward Puhl,
Wisconsin.

Edward Puhl insists we plagiarize from "Bee cause" with two articles by Paddock and Cale. Puhl may cause both writers to blush, but we risk the mighty Lewis wrath, and here 'tis.

HERE never was a time since I can remember when the production of honey created a shortage like the present. It is a good time to increase production by taking into account improved practices, spring management, wintering, etc. Check up on colony management. Study your problems. Put what you learn into action.

Study the teachings of Dr. Miller. There never lived so good and great a beekeeper as Dr. Miller. Then, second, Mr. George Demuth who said: "Raise bees for the crop and not on the crop." It is also an old adage with me to say: "Use your head instead of your feet."

Two-thirds of the beekeepers manage colonies which they count in numbers, when perhaps only half are

producing. The other half are boarders. With half producing and half loafing, the feet have been used instead of the head. Add the weak colonies to the strong ones; or, if possible, equalize the brood in disease free apiaries. Big battalions win big battles.

I want to call attention to the article reprinted from Gleanings in the December issue of the American Bee Journal "Spring Management of Bees," by Dr. C. C. Miller. Read this article and you will see that Dr. Miller was ahead of his time. Two other good articles on spring management were in "Beecause" 1932; one by F. B. Paddock, of Ames, Iowa, "Solving Spring Problems" and one by G. H. Cale, "Beware—The Spring." [We reprint both articles mentioned fol-

lowing Mr. Puhl's remarks.] These three articles on spring management in our estimation are the best that have appeared and should help solve many production problems.

More and more each year as time goes on, I put these suggestions into practice and I have given the same advice to beekeepers in Wisconsin, and what enthusiasm those who follow it have shown.

It makes no difference whether you winter your bees in the cellar or out of doors, spring management is the big problem if you wish to produce large crops regardless of the kind of season.

Few beekeepers have given much thought to spring management. I visited scores of beekeepers during the first honeyflow in Wisconsin and



I venture to say that only one-third ever have given it serious thought. Is it any wonder there is a shortage of honey in this state?

I do not wish to immortalize Dr. Miller or anyone else. I have read Dr. Miller's "Fifty Years Among the Bees" and "Thousand Answers to Beekeeping Questions," but if he had not written another thing except the article, "Spring Management of Bees," (December, 1935, A-B-J) I would still say he was a great man. We truly do not value a man until after he is gone.

SOLVING SPRING PROBLEMS

By F. B. Paddock,
Iowa.

Spring management has been defined as the operations necessary to get the remains of over-wintered colonies in condition for the honey-flow. It is true that the importance of spring management depends on the work that has been done in the fall or period of "preparation," when the foundation is laid for the succeeding crop. It also depends on the winter care of colonies or the period of "conservation" which is for many beekeepers a period of "indifference."

Someone has said that spring is a period to catch up in colony management or a chance to correct some of the mistakes which were made during the fall and winter periods. It is true that spring is only a time to attempt to correct mistakes and omissions. Spring becomes a period of "anticipation" only when every detail has been properly attended to during the fall and winter.

From what has been said it is evident that the real work of spring management has to do with those colonies which have come out of winter in poor condition. Attention must be directed to such colonies if any crop is to be realized. The problem is to so manage these underdeveloped colonies so as to realize the most out of them, not necessarily to make profitable returns from them. The average producer today must realize that profitable honey production means getting the most out of his investment in equipment, stock and labor. It is a waste at every step to put in good time, attending to poor stock in poor equipment. The returns will not justify the effort.

It is often said, "I do not have much winter loss." That is true only in so far as external appearances relate the situation. A hive may have some bees in it, but does a handful of bees and a worn out queen constitute a colony when considering profitable production?

The demonstration apiary results of Iowa tell the story over a period of twelve years' successful operation. Every year it has been possible to show average returns of all colonies of almost twice the state yield.



"Prof." Paddock, here tries his hand at solving spring problems."

If the state average spells profitable production then double the returns should be more profitable. But the fact is that the state average is not profitable and that profit comes only when the higher yields are harvested.

The experienced and careful producer can tell much of the condition of his colonies by carefully observing flight conditions on the early warm days of spring. Some hives will show but little flight but a careful examination will disclose the fact that the entrance is obstructed. When the entrance is cleaned there will be ample flight but such a colony needs to be observed further for a clogged entrance spells a condition not at all perfect.

The colony is below par in one or more respects. The flight may seem to be vigorous, with many bees in the air, but a second look will disclose "spotting," the dark chocolate spots on the front of the hive. This will mean a reduced vitality of the bees in the colony for it indicates that the bees have had to consume stores heavily in order to survive the low winter temperatures. Not only will such a colony be far below normal in population but all remaining bees have reduced individual vitality with which to carry on during the spring building-up period.

Weak Colonies Robbed

While the entrance should be cleaned and free from all refuse it should not be unduly large. There are two reasons for this; a small entrance aids in conserving the heat of the colony which is so vital during the spring, and a reduced entrance tends to discourage robbers. Robbing is a practice which is to be discourag-

ed at all times and prevented whenever possible, but it is especially harmful in the spring.

The internal colony conditions are not fully known by the producer so it is often the case that a weak colony is in the last stages of disease, thus robbing spreads the disease from hive to hive in an apiary. This robbing goes on quietly in early spring and very often is confused with normal colony flight. Many have had the experience of detecting a dead colony, after it was robbed out, after which flight activity ceased at that hive. Weak colonies are often finished in the early spring by having their stores taken from them. This robbing can increase in an apiary until it involves most all of the colonies and some that are not so weak will be overpowered in defending their stores.

The practice of spring feeding has been overdeveloped among producers in general. The common practice of colony management does result in a shortage of stores in most colonies. Too many depend on some means of making up the store requirement of a colony by feeding in the spring. Bees will not take up feed readily at normally prevailing early spring temperatures. The application of the feed dissipates colony heat which is so precious during the brood rearing period. Feeding induces robbing, even under the best of conditions. Nothing makes a beekeeper feel more foolish than to realize that feed given to a certain hive has been fed to robbers which apparently occupied the hive, but in reality only long enough to fill up. This experience is common.

Spring Heat Is Costly

The survival of bees at temperatures below 57° F. depends on the bees community effort, called the cluster. This picture is forgotten in spring which is really more critical for a colony than winter. To survive during the winter it is necessary for the cluster to maintain a temperature of 57° F. but during the spring when a brood rearing temperature of 97° F. is necessary, the colony load is even greater than during winter. The difference between 97° F. and the existing outside temperatures is greater than prevails in the winter, below 57° F. To maintain the brood rearing temperature of 97° F. the bees have to manufacture heat which they do by the expenditure of bodily energy and the consumption of stores.

It must be recalled that a bee dies when its supply of energy is exhausted. It cannot revitalize its energy. If a definite load of work is necessary, that is the maintenance of 97° F. regardless of external conditions, it should be evident that if a small number of bees are present the individual load of labor will be high.

(Please turn to page 234)



A Recognition of Achievement

We are glad to announce that Dr. Lloyd R. Watson has been awarded a Guggenheim Memorial Fellowship to be devoted to "Research toward the development of new and improved types of honeybees." Much has appeared in these columns in recent months regarding the desirability of special investigations in the breeding of bees. This award to Dr. Watson is a well-merited recognition of the outstanding work which he has already done in the bee-keeping field. He is to carry on his work in his own laboratory at Alfred, New York.

Dr. Watson is to be assisted by a full time microtechnician and a full time apiary assistant. This should make possible rapid progress in the study of the special problems to be investigated. It is our understanding that the primary object will be the selection and breeding of long tongued bees which may be able to harvest the nectar from such plants as red clover and others slightly beyond the reach of the common bees. We congratulate Dr. Watson and we also congratulate the industry in the recognition which this fellowship offers.

ABJ

The Cooperative Disease Experiment

So much interest has developed in the progress of the disease experiment that a report of progress to date seems desirable although there can be but little added to Dr. Park's full discussion in our January issue.

Because the queens in the most promising colonies were old it seemed wise to take them south and endeavor to rear a few daughters from them before time for this season's operations. It was decided that if an extra generation could be secured, the process of breeding might be hastened thereby.

On invitation of Dr. F. L. Thomas, State Entomologist of Texas, four colonies which showed definite resistance to American foulbrood were taken to the Rio Grande Valley. First they were carefully inspected for the presence of disease, but none was found. On arrival in Texas they were again examined by Texas inspectors and were still disease free, although there was brood in the same combs which had been badly infected by the test given last summer. All four have remained free from disease throughout the winter.

No attempt has been made to rear a large number of queens. Instead it has been the purpose to rear a few from each colony and mate them to drones of this stock in an effort to carry the inheritance of disease resistance over to the succeeding generation. Our field editor took the bees South late in November and he was joined at the Texas sub-station at Weslaco by Dr. O. W. Park, in February.

Some of the young queens have been carried to isolated places where they were permitted to fly with drones from the resistant colonies. Others have been mated by the Watson artificial method. The nuclei containing these queens are being shipped back to the experimental apiary at Atlantic, Iowa, where they are to be put to the same severe test to which the parent colonies were subjected last year. If they show similar resistance it would seem worth while to rear a large number of young queens from this stock for use under apiary conditions.

ABJ

Minor Honey Plants

In many northern localities this is a critical season for the bees. With the clover flow just ahead, it is important to rear the greatest possible number of young bees for the coming harvest. Brood rearing depends for its

rapidity very much upon the stores which are coming from the field. While colonies with plenty of reserves will continue brood rearing at this season, they will make faster progress when fresh nectar is coming in. Bees within reach of a variety of early blooming flowers make much more satisfactory progress than is possible in places without them. Thus plants may be extremely valuable to the beekeeper which do not yield enough honey to show in the form of surplus.

ABJ

Nectar Secretion

There has been so much speculation concerning the factors which control nectar secretion that much interest develops in anything giving authentic information on the subject. The articles by R. G. Machlachlan, beginning in our March issue, offer an interesting discussion of the subject by one who has given much attention to it from the standpoint of its effect on the commercial honey crop.

Machlachlan lists eight factors as having an important bearing on nectar secretion. Of special interest is his conclusion that the duration of light is more important than its intensity. This is borne out by the fact that heavy flows of honey come with great regularity in western Canada which is far enough north to insure very long days in summer during the time of the bloom of the principal honey plants.

The factors most commonly recognized have been the temperature changes between day and night and the soil influence. These have been commented upon at length by numerous observers. It has long been recognized that in localities with cool nights followed by hot days, good flows were likely to be the rule.

He also suggests that the time of year has an important influence. In the North where the growing season is short and a plant has but a brief flowering period, there could be but little variation in this respect. In southern regions, however, where plants often bloom several times during the year this influence is marked. In south Texas there is a plant common to the semi-arid areas commonly known as senisa, which blooms intermittently at all seasons. During the winter and spring flowering it apparently yields but little nectar. In October, on the other hand, it yields generously and often provides an average of a super per colony of surplus honey. It is regarded as a dependable source of winter stores.

Yellowtop is another plant which flowers several months, but which yields its nectar principally in late fall. These two are examples among many which support Machlachlan's observations.

His comments relating to the color of light rays raise many interesting possibilities which leave room for study. It is a field beyond the reach of the ordinary observer which can be explored by the scientist.

The fact that some plants prosper only in the bright sunlight, while others require shade, will readily be appreciated by every observer. The degree of sun or shade certainly has an important bearing on the behavior of many plants.

As for soil influence, much comment has been made of the fact that cotton yields but little on sandy soil while yielding well on black loams, but the reason for such behavior has not been so clear. The fact that buckwheat does best on sandy lands while yielding sparingly on heavier soils, has been somewhat of a mystery. Much remains to be done before all these peculiarities of behavior are fully understood.

Poison By Wholesale

One who has not seen it in operation can have but little idea of the manner in which poison is distributed by means of the aeroplane. It certainly covers the ground in a hurry and spreads the dust over everything very efficiently. In the case of sulphur, it is doubtful whether any injury is done to the bees, but when arsenicals are used there is little chance for the bees to escape injury. The machine sweeps low over the field and spreads a veritable cloud of dust which covers everything and drifts to some extent over surrounding areas.

It is a great timesaver, since one pilot can dust a hundred acres in an hour and spread five hundred pounds of poison in five minutes. Where crops are grown in solid fields of large extent, as cotton is grown in the southern states and most fruits are grown in California, it is possible to do the job in a small part of the time that would be required with ground machinery.

Under present conditions it appears that poison must continue to be used in the control of numerous insect pests, since no other efficient means is known. That being the case the problem of protecting the honeybees in such areas becomes a serious one. When the aeroplane is used for the spread of poison in the form of dust an entire neighborhood is likely to be covered so fully, that no bees can safely be kept within flying distance.

Even though the bees may not be poisoned from visiting the flowers in the treated area, they are likely to be killed by taking up moisture in the form of dew. Reports of the killing of large numbers of bees, even the loss of entire apiaries, come to us from constantly widening areas. As has been stated in these columns on other occasions, hundreds of beekeepers have been compelled to abandon good locations on this account. It has assumed the importance of an emergency for the industry and deserves more consideration on the part of the government agencies than it has received thus far.

ABJ

No One Best Bee for All Locations

Regardless of personal preferences as to the races of bees, it must be recognized that Caucasians have certain adaptations which fit them especially for some northern latitudes. They are later in starting brood rearing in spring and are thus less likely to be caught with an over expansion of the brood nest with the return of late cold snaps. This is a decided advantage for localities where the season is short and the honeyflow comes late.

They are poorly suited for southern regions where the honeyflow comes early as it does from orange in California, Texas, or Florida. There the great difficulty is to get brood reared early enough to provide strong colonies in advance of the citrus flow. In this respect there is a difference in the behavior of strains of Italians and it is the early breeding bees which are needed in the citrus belt.

It must be admitted that there is no one best bee for every condition. Certainly the behavior which best meets the needs of the beekeeper in the warm southern climate is unsuited to the high Rocky Mountain region where spring comes late and where the honeyflow does not come until midsummer. In one case early brood rearing is a decided advantage, in the other just the opposite is true.

ABJ

Bees in the Orchard

At the time this issue reaches our readers many of our northern apple orchards will be in bloom. The size of the coming crop will depend to a large extent upon the activities of the honeybees in the distribution of the pollen. The efficiency of the insects in performing this service will depend upon the location of the hives in relation to the trees, the number of bees within range of the orchards and the weather during the period of bloom.

Within recent years the orchardists have come to understand the conditions to be met to insure favorable pollination. There still remains a large potential honey harvest which will not be gathered because the colony population is too small. Perhaps we may yet learn how to conserve the bees in such a way as to get this honey. It is one of the important problems remaining to be solved.

Public Recognition of Beekeeping

It is not often that the beekeeper finds a place of importance in public celebrations. It remains for Vice-President Garner's home community, Uvalde County, Texas, to stage a County Honey Festival. This occurs on May 7 and 8 as Uvalde's contribution to the centennial year program. One special feature of the occasion will be a pageant in which more than 500 persons will take part. A Uvalde girl is to be selected as the festival Queen Bee. She will be attended by nine princesses to represent the principal kinds of flowers from which Texas honey comes.

Such an occasion is of far reaching importance for the beekeeping industry and will do much to impress the public with the place of honey production in the agriculture of a state. This emphasizes what can be done with proper leadership.

Once the Honey Institute is well enough established to take on other enterprises, it may well consider adding someone to its staff who will devote his entire attention to educational programs. There is much demand for general information about bees and a department devoted to such work could be kept very busy indeed.

If programs for public entertainment could be offered ready for use, hundreds of communities would make use of something of the kind. Probably there would be few occasions when a program as elaborate as Uvalde is putting on would be used, but school or club entertainments would be in constant demand if rightly prepared.

ABJ

The San Antonio Meetings

The use of the term "International Congress" in connection with next fall's bee meetings should not be confused with the International Congress which has been held for so many years in Europe. Only once has that organization met on this side of the Atlantic. Our coming conventions are international to the extent that Canadians have a regular part in them and beekeepers will be invited from several other countries this year. The San Antonio conventions are the regular meetings of the Institute, the Honey Producers' League and the Southern Conference.

ABJ

Good Combs

The wise beekeeper anticipates his needs and prepares in advance for the coming crop. A thing of great importance is to have good combs in every hive. It is safe to say that in the average apiary the possible crop is reduced from ten to twenty per cent because of poor combs.

The way to get perfect combs is to use full sheets of foundation and have them drawn above the brood nest during a honeyflow. Such combs contain a minimum of drone comb and are attached on all four sides to the frame. Combs drawn to the bottom bar have substantially larger storage capacity than those with round corners and open space across the bottom.

The best investment that the honey producer can make is in good combs. If foundation is given during a dearth of nectar, it is likely to be gnawed and the resulting combs badly damaged. Get the combs drawn during a honeyflow and have plenty of them. An extra supply of good combs will return big dividends during a heavy honeyflow.

ABJ

Rain

The editor of *Rural New Yorker* in a poetic moment said, "Rain falling on cement and asphalt is just rain—when it falls on the good earth it means flowers, food and plenty." Looking from a window in the country on the gloomiest of rainy days, this writer has been impressed with the truth of that statement. How good it seems to see things green and fresh in contrast to last summer's heat and drought.

Rain in the city may mean only gloom and discomfort but in the country it is the first essential to prosperity and the forerunner of life, beauty and joy.

(Continued from page 231)

er than when a large number of bees are present. The heavier the individual load the sooner the bee exhausts its supply of energy and dies. Spring dwindling is nothing more than extinction from exhaustion.

Dwindle from Exhaustion

A colony may come into spring with a reduced population, for more than one reason. The colony may have started the winter with old bees; the winter conditions may have been unusually severe and the individual load wore out the energy supply faster than normal. Following these conditions the heavy spring load soon has a telling effect on colony population.

Beyond this is the influence of the queen condition or vitality. The queen is by nature an organization of very delicate adjustment which can be thrown out of tune very easily. A queen may have been apparently good enough to develop a desired population in the fall but for some unexplained reason will fail to produce the necessary eggs for colony development during the spring. A failing queen can be detected during the spring in several ways. However, whenever a colony is below the yard average in population it means that special attention is necessary. If it is evident that a colony is merely holding its own, or, at best, lagging in its development, it must be realized that such a colony can seldom be brought up to prime condition for production.

Too many producers attempt to measure their activities in the number of colonies operated rather than the returns obtained. It is only profitable to operate efficient colonies, those with extremely large populations with a vigorous queen. Whenever a colony is found in early spring that is below the average yard strength it is wise to unite it with a good queenright colony. The failing queen should be eliminated and the colony population whatever may be its value, is thrown in where it will be of some use in making a good colony better. The colony thus increased in colony strength will make more returns than could be expected from the two colonies if kept separate. Apiary operations have been reduced which make for more profitable production.



"Glory"—writes as follows:

BEWARE—THE SPRING

By G. H. Cale,
Illinois.

This should be a maxim, a danger slogan for the beekeeper—beware the spring. At this time all the work of the year may be undone. The earlier beekeepers knew this thoroughly. John L. Byard, of Massachusetts, a practical beekeeper of the previous generation, emphasized the importance of spring management more than most of the beekeepers of his time.

Byard hailed from Southboro, Massachusetts, but was born near Brattleboro, Vermont. He became an inspector for the state and was in charge of the apiary of the Massachusetts Agricultural College, at Amherst, under Dr. Burton N. Gates.

I was with Byard at the college and I remember how he stressed spring management in its true relation to wintering. He forever preached the idea of conservation of energy when early brood is present in the hive. "Then," said he, "every bee counts. Warmth and abundant food are needed. You may have your bee cellars and your packing cases, but give me the sunny corner, warm quilts, and shelter from the winds of spring, and my colonies will beat those that come from the cellar, without this care."

He demonstrated it too and such good common sense it is. In these days, we know Byard was right. O. W. Park, at the Iowa Agricultural College, shows, by a physical law, that bees have to work much harder in May to balance temperature conditions than they do in December. Park says, "We are used to thinking of winter as the only time of protection but our figures show clearly that a colony without protection in March must produce 50 per cent more heat than it has to produce in January! Even April demands 5 per cent more, and May, that mild month of bees and blossoms, requires the colony to produce practically as much heat as it does in February, and December, and only a little short of what it must produce in January."

"But that is not all. You know, perhaps from experience, that it takes more out of you to lift a sack of flour from a shelf five foot high to one six foot high, than it does to lift the same sack from the floor to a shelf a foot high, although the weight and the distance are the same in both cases.

Cold Spring Weather Depletes Colony Fast

"Now, apply this to the colony of bees. In December, when the temperature is 24 above zero, a broodless colony keeps 57 degrees of temperature in the hive without much difficulty. It also loses its heat slowly. But in May, when the day is 64, a colony

with brood holds its necessary 97 degrees only with great difficulty. Yet the difference between the outside temperature and the colony temperature is just 33 degrees, in both cases. The greater difficulty of keeping the right temperature in May is due to the fact that heat is lost much more rapidly from a hive with a high temperature inside, than it is from the same hive with a lower temperature inside."

His figures are based on what we know about the heat which bees need when they have brood and when they are broodless and on the weather recordings of Iowa for a 52-year period. They show that bees need protection more in March, April, and May than they do in December, January, and February. This emphasis does not mean that bees should not be given winter protection but it does mean that the protection should not be taken away from them in spring.

Park's figures show also that it is not unusual for colonies to consume fifty pounds of stores, from the close of the honeyflow in the fall to the beginning of the spring flows, and that more than half of this honey is used for early brood rearing. This points out another danger of the spring period—lack of food.

Feed Liberally to Build Up in Spring

Colonies cannot produce new bees without food for them and a food shortage is most likely to occur during the last part of the spring brood rearing period, just before the beginning of the honey harvest. If the bees are short, they should be fed then and fed heavily. Remember, at the time of the flow, one strong colony is more profitable than a dozen weak ones and one comb of brood costs at least a comb of stores and a good colony, at the start of the main honeyflow, should have not less than 12 full combs of brood.

Curb Disease Quickly

Whenever disease is detected in a colony it is necessary to take definite and firm measures to eliminate it. Whenever a hive is found in the early spring which does not contain live bees it should be taken from the yard and examined carefully. If disease is present plan to burn. If a weak colony shows, by an early examination, to be diseased plans should be made to burn it. The continued fight which is necessary against disease is the result of the inability of the producer to make the necessary sacrifice at the start. The desire to save some small item, such as 10-20 pounds of honey or 1-2 pounds wax, or a handful of bees, leads a never ending battle in which disease usually wins. To play with disease is to invite trouble and disaster. **It is better to play with fire than disease.**



E. L. SECHRIST

E. L. SECHRIST, author of the series of articles under the title "Honey Getting" (see page 245) is a cosmopolitan beekeeper. He was born in Ohio August 15, 1873, and inoculated with the germs of beekeeping by an uncle whom he visited as a child. He soon bought a colony of Italians in a Langstroth hive and made trips with his father to Medina, twenty miles away, to buy an extractor and other bee supplies.

Soon he had twenty-five colonies. It was a great day for him when they produced more than a ton of honey from white clover. He borrowed maple sap pails from his father and tied cloths over the tops for honey containers. The honey had to be sold before the sap began to run in the

Sechrist A "Honey Getter" Under Four Suns

Much interest has been shown in Honey Getting, of which this issue carries the third part. Some ask who this man is who seems to have gathered so many fundamentals together under his pen. Here is a story about him and his beekeeping experiences.

spring and was peddled to stores and through the country.

He and a neighbor boy undertook transferring a hundred colonies on farms within twenty miles of his home, from all kinds of boxes, old churns, washing machines, barrels and kegs, into double-walled chaff packed hives. This was the first extensive beekeeping experience. The man who sold the hives was an old time beekeeper interested in the youngster who was studying beekeeping, reading the journals, and who visited him frequently. He was put through bee catechisms and bee hunting. This transferring experience gave the young beekeeper more of an inside into the behavior of bees than

in any other work with bees he has ever done.

Even while in college or studying architecture and following that line of work in Ohio, Pennsylvania and Indiana, Sechrist continued to own his bees, either operating them himself or with the help of his mother in his absence.

For two years of this time he worked with bees away from home, one year in the white clover region of Ohio, near Delphos, which later developed into the great alsike sweet clover area of western Ohio and where later Sechrist himself, working for the federal government, organized the beginning of the great Tri - County Association which still flourishes.

The next year he worked in the tulip tree and white clover region of Illinois and in 1906 he went to Rhodesia, Africa, spending four years there teaching mechanics and agriculture in a Mission school and, having taken with him twenty-five hives, he soon had an apiary in operation, the first in Rhodesia.

Although the natives produced some honey from cylinders of bark placed in trees and occupied by stray swarms, no systematic beekeeping work had been done. Sechrist's bees came from bark hives or from wild bees in hollow trees or holes in the ground. The bees were quite similar to Cyprians, unmanageably cross if angered. Some good honey was produced but generally the colonies swarmed with only a handful of bees, long before they had filled the hive with comb.

In 1910, returning from tropical Africa to the United States, Sechrist concluded he would prefer to live in a warmer climate than northern Ohio and went to California to work with



Sechrist's first apiary and garden in Tahiti, at Te-ahu-shu, "Place of Balmy Breezes." Since then he has moved to a new home across the bay. Great fun moving the bees with natives on small boats.

bees in the Great Central Valley which has developed into one of California's principal beekeeping areas. The first year he worked for wages and experience but his employer was killed by falling from a tree while hiving a swarm, thus shifting the management of the apiaries to the employee. Within a few years he was operating six hundred colonies, mostly in the alfalfa seed fields of the Sacramento Valley, although he lived and had his queen-rearing apiary at Fair Oaks, twenty miles from Sacramento, among the orange and almond groves of northern California.

In these apiaries, comb honey was produced in old-fashioned wide frames, but the production was soon changed to extracted honey which brought into use the first four-frame and then the first eight-frame extractor in northern California. He continued one practice, which is still good, keeping ready for use one hundred section supers which were placed on the best colonies when conditions were favorable for producing fine white comb honey. This honey, made during the height of the honeyflow, resulted in as many pounds of comb as of extracted. Occasional colonies did not do as well at comb honey and the supers would be shifted to others.

As finished sections were removed, unfinished ones were concentrated on colonies doing the best work until, with no unfinished sections, all the hundred supers were filled, and all the colonies were thrown back into the production of extracted honey.

Since then, this plan has been followed by a number of the best beekeepers and it seems to be a money making procedure in any location where, for a part of the season, there is a rapid and abundant flow of nectar.

During the seven years of beekeeping in California, Sechrist saw the union of the antagonistic beekeeping organizations of northern and southern California into the California State Beekeepers' Association with one annual meeting in the north and the following one in the south of the state. This was an important event in the history of beekeeping in California and resulted in harmonious activity of beekeepers.

Experimental work during these years in California was an interesting part of Sechrist's beekeeping experience. It was concerned chiefly with equipment, capping melters and wax separators. In cooperation with Mr. Severin of southern California, an outfit was developed which later was used in an improved form and became the only type of capping melter and wax separator which produced wax ready for market without changing the quality or color of the honey run through the apparatus.

In 1917, at the beginning of the war, Sechrist was called to Wash-

ton to the Bee Culture Laboratory under Dr. Phillips and later, under Hambleton. Here his circular, "Keep Bees Better," had a circulation of many thousand copies. During this time the great problem was to increase the production of honey as a war measure and the work of the laboratory was devoted to that end.

After the war, Sechrist went to Hispaniola for two years, operating sixteen hundred colonies of bees but returned to Washington to the Bee Culture Laboratory after that time. His chief work was then known as regional beekeeping, involving travel and field work, and a study of the problems of the commercial beekeeper. The result of it was the United States Standard Grader for comb and extracted honey which is now generally considered the finest set of grading rules for the practical beekeeper that has been developed.

Studies in the economics of beekeeping in the alfalfa sweet clover region of Utah, Colorado, Montana, Wyoming and Idaho, and later in the white clover states of Ohio, Michigan, New York, Wisconsin, Minnesota and Iowa were made which resulted in the bulletins which have been noted in our pages on the cost of honey production issued by the Bee Culture Laboratory. This work was continued in California and Pacific coast states when Sechrist was in charge of the U. S. Pacific States Bee Culture Laboratory, at Davis, California, in association with Todd and Vansell.

In the three years before Sechrist's retirement from federal service in 1933, the Pacific States Bee Culture Laboratory devoted its principal efforts to these surveys of the economic side of beekeeping as related to apiary management and to a study of the relation of bees and beekeepers to the pollination of fruits in California. Much basic work was done by him and his co-workers and a number of important publications have resulted, which have been mentioned before in these pages.

All these contacts with commercial beekeepers in which he was permitted, for days at a time, to delve deeply into systems of beekeeping followed by the best commercial producers were invaluable. In the alfalfa sweet clover region, for instance, a circuit of collaborating beekeepers was made three times in one season with two years of record keeping and daily work, an unequalled opportunity to understand management methods.

Sechrist's early experience in Ohio and Illinois, his commercial beekeeping in California, four years in Africa, two years with sixteen hundred colonies of bees in Haiti and Santo Domingo and a short time with bees in Tahiti in 1915 where he is now rearing queen bees of the old, original dark Italian stock, gives him a varied and extensive personal experience

which should be of great value to beekeepers.

In writing of his present work "Honey Getting" Sechrist says that "in consideration of what the beekeeping industry has done for me through nearly fifty years, I am at work while I have some leisure in Tahiti, in going over the records and reviewing the work and observations of these many years, putting the most important parts into what I hope later to be a book called "Honey Getting." The first section, which we are now publishing in the Journal, is devoted to apiary management. A later one will take up producing and handling honey, honey houses and equipment.

ABJ

Volume of Package Bee Business in 1935

We are in receipt of the statement of the volume of business in package bees and queens for 1935, from the office of the Managing Director of the marketing agreement for shippers of package bees and queens.

In volume in queens, Alabama is first, Mississippi second, California third, Georgia fourth, Louisiana fifth, Ohio sixth, and Texas seventh.

In combless package bees Mississippi is first with 20,957 two-pound packages and 7,682 three-pound packages. Alabama is second with 20,301 two-pound packages and 8,168 three-pound packages. Georgia is third with 8,551 two-pound packages and 5,059 three-pound packages. Louisiana is fourth with 8,012 two-pound packages and 4,179 three-pound packages. California is fifth with 5,749 two-pound packages and 2,581 three-pound packages. Texas is sixth with 2,763 two-pound packages and 1,531 three-pound packages. In comb packages, Texas is first with 561 two-pound packages and 69 three-pound packages. Louisiana is second with 456 two-pound packages and 131 three-pound packages. Georgia is third with 146 two-pound packages and 3 three-pound packages.

The total volume of business for the United States in bees and queens was 117,373 untested queens with a value of \$66,630.10, and 451 purely mated tested queens, \$699.78. Package bees with queens: one-pound packages 120, \$171.10, two-pound packages 66,780, \$146,702.92 three-pound packages 29,868, \$84,332.39; four-pound packages 996, \$3,294.85; five pound packages 907, \$3,847.71.

There were also 9,501 packages without queens in 1935. There was a total of 1,688 nuclei packages.

The total number of queens sold with and without packages was 218,186. The total number of pounds of bees, 256,104.



A. V. Small, standing beside his liquefying tank; a bit dressed up for the occasion.

400 Colonies As a Side Line

By H. W. Stewart, Secretary,
Kansas State Beekeepers' Association.

MR. A. V. SMALL, of Augusta, Kansas has the unique distinction in Kansas of being the greatest "sideliner" in beekeeping, taking care of his 400 colonies merely as an avocation. Such an achievement raises a question: If there are other "sideliners" outside of Kansas who are equaling or surpassing Mr. Small's record, it would be interesting to have "thumb-nail" sketches such as Mr. Small here gives of himself.

I was living under the comfortable opinion, which I had gleaned from a beekeepers' magazine, that the proper care of as many as 300 colonies was one man's job, and not merely a side line. Now that cherished bit of knowledge has been knocked out of me. Indeed, I find that what exceptional men are doing in almost every department of human endeavor keeps tearing down the house I have been living in, compelling me almost against my will to take refuge in new habitations; and after my association with enterprising beekeepers, I can scarcely hope ever again to be in a state of equilibrium.

Wishing to avail myself of good

counsel and the extended experience of Mr. Small, I recently desired that he serve on an important committee assignment in our association, and wrote to him concerning it. I believe Mr. Small will pardon me if I quote briefly from his letter, giving me a surprising number of reasons why I should relieve him of the contemplated responsibility:

"I am fifty-three years old," he said, "and am holding down a full-time machinist's job in the White Eagle refinery machine shop where fifteen machinists are employed. In my spare time I look after 400 colonies of bees, sell a few bee supplies and garden seeds, and then, just to keep out of mischief, make beeswax candles for several Catholic churches, and at odd times experiment with wax refining and bleaching."

All of which goes to show that there are people in this world who, though never having made the headlines of big newspapers, nor having been discovered by Mr. Ripley, are nevertheless of that worthy company known in poetical language as "God's noblemen."

At the Manhattan meeting of Kansas beekeepers, in February, Mr. Small gave an enlightening talk on the proper rendering of beeswax. He gave it as his opinion that the sun wax extractor gives the best grade of wax and that it is the most desirable method of rendering for the small beekeeper. He exhibited samples of wax varying in color from that of dark granite to a sample so delicate and pure in appearance that it seemed that the sunlight was about to shine through it. The difference between the good and the bad was a matter of process, he said. He cautioned against rendering wax in hot water in a galvanized iron tank, or any iron tank corroded or pitted with rust, as such containers seriously stain and very nearly ruin the product.

Such talks about everyday problems of the beekeeper by men of Mr. Small's experience afford a very good illustration of the value of beekeepers' associations, which are always handing out benefits to its members —like the mind of a wise man "bringing forth out of his treasure things new and old."

The Scientist and the New Beekeeping

By Dr. L. R. Watson,
New York.

The last of three articles from Dr. Watson about the new bee. Many of us dream what this bee should be like. Some agree with Dr. Watson; some do not. We will publish something on both sides.



DOWN through the ages to the present time the heredity of the honeybee has been fixed for us in advance rather than fashioned by us to our likes. Whatever of usefulness the bee possesses for us, it possesses by virtue of natural chance adaptation with no amelioration from our hands. Our mastery over the performance of our bees has so far extended almost solely to the factors of environment with only slight and uncertain control of their heredity.

Under laboratory conditions it is now possible to mate queens as we choose. The breeding of bees along any desired line is rapidly being undertaken in government maintained laboratories in such widely scattered countries as England, Germany, Russia, and China, and letters asking for instruction and details are being received from still other countries, among them, India, Mexico, Brazil and Paraguay.

The changes which we now seek are to come by evolution and addition, so that while we search for new light, new truth, new methods, we shall cling closely to all that wealth of apicultural knowledge, science and tradition which we and our noble ancestors have found to be true and worthy to live.

There is now being born before our eyes a new beekeeping which has for its foundation and background that plain common sense which we call science. We have abandoned once and for all the will-o'-the-wisp hope that there is to be found anywhere in nature the ideal bee.

It is perfectly obvious that the way forward in beekeeping lies along the way of actual bee-breeding. A few far sighted souls have envisaged this for years and have possessed the hardihood to preach it. We know that pure scientific research lies at the basis of our industries. It was the discoveries of Faraday (tell what he did) and not those of Edison that furnished the development of our electrical industries; but once the foundations are laid, the Edison must be found.

Although genetically beekeeping has hitherto played a lone hand, we

must now acquire the point of view that it shall no longer be an isolated science with sharp lines separating it from other biological sciences nor even from economics, sociology and political science. We shall do well not to forget that we live in surroundings that are in fact a universe in which each part bears a definite relation with every other part and these relations cannot be ignored. A consciousness of these relations should tincture all beekeeping philosophy, and saturate the minds of the men we train to be our future leaders.

Suitable preparation for creative work in this field requires that the candidate have a thorough, practical knowledge of bee behavior, and this can be gained only through experience, and that he possess a thorough grounding in the science of genetics. Progress rests in the main on individual initiative, and prospective researchers in bee genetics should bring to the laboratory the most liberal preparation possible.

Since the actual operation of instrumentally inseminating queens has to be done under a microscope, it hardly need be said that a teste for microtechnique is highly desirable. It may also be repeated that the small size of the bee requires that the bee geneticist forever work with small distinctions, small values; characters which would completely escape the notice of more grossly trained vision. College courses of training should include general entomology, morphology, anatomy, taxonomy and ecology of insects, together with advanced courses in beekeeping. We would recommend that students register in graduate school in biology with concentration in honeybee genetics.

It is only fair to point out to serious inquirers that in the development of a new field like this certain difficulties may be expected which would not be so likely to be met in an old established profession. For example, young scientists mapping out for themselves a career hesitate to risk time, funds and professional reputation in a venture which has not yet been proved. We periodically receive letters from prospective young

workers in this field asking what the probabilities are for securing a position after the completion of their training. It has been our policy in answering such enquirers to point out in perfect candor that the field is so new that no established positions are yet open to candidates. Attention is then drawn to the scientific and economic importance of the field, and the enquirer is left to ponder whether the chances for service to the present and to future generations appear great enough to warrant his taking the chance.

Long years will be required to develop all that we desire in bees and hence the necessity of great patience. There are needed investigators of great patience, quick observation, determined will, and absolute accuracy and honesty. Slight variations of body form and of behavior must be detected and used in the selection of breeding-stock. There is no substitute for close accurate observation. We have sometimes found that the hardest effort has advanced the undertaking but slightly or possibly not at all, but the scientist must not yield to discouragement. Anybody could quit, but the scientist must go on as seeing what is not yet visible.

There is really something very wonderful in the idea of creating a new, useful and beautiful thing. Especially does this concept capture our thinking when the prospect looms of some human amelioration. All the roads to success are under construction and progress along them must be slow and cautiously pursued in the absolute confidence that a firmer foundation is gradually being built for future study.

The first and the last thing required of genius is the love of truth. To see things as they are and to report them as they are seen is not so easy for people of prejudiced, imaginative, or dramatic temperaments, but almost nothing can so harm and handicap an infant project as untruthful or only partly truthful reports regarding its progress. The craving for priority of publication has lured many a well intending young scientist into professional discredit.

The bee breeder must be a close observer of nature's ways, and he will seek to follow the methods of nature, but he must work faster than nature. He cannot afford the great numbers nor the mass destruction of nature, nor has he at his disposal the wastes of time nor the innumerable generations which characterize nature's ways of producing changes. The growing of animals is expensive of money, time and labor, and breeding operations must usually show substantial gains reasonably soon or they will be abandoned as impractical.

On the other side of the account it should be said that bees are relatively cheap material; they multiply rapidly and the generations come fast. The bee breeder can produce a single

generation in about a month, whereas under ordinary conditions a generation of hens requires approximately eight months; a generation of hogs, a year; sheep and cows each require about two years, and horses require about four years. It is a remarkable fact that the generations of bees which can be raised in a single season of five months are equivalent to approximately 150 years in the eyes of the human geneticist.

Of all the sciences which have contributed, and are contributing, to the improvement of agriculture, none is more important than genetics. To the present time as we have seen genetics has not been able to assist much in beekeeping but we can confidently assert that this science which has contributed so generously to the better-

ment of plants and other animals for agricultural purposes is destined now to render a similar service to the science of beekeeping.

It is hardly to be doubted that vast possibilities await realization through the application of the principles of genetics to the breeding of honeybees. Before the scientist lies, not just a strip of unexplored territory, but a vast unmapped area rich in scientific and economic possibilities. Its development is only just beginning—just beginning—and depends upon the initiative of men of vision. It claims the attention of the apicultural producer; it invites the most serious investigations of the geneticist, and it lays claim to the thoughtful consideration of the philanthropist and of all students of biology.

ABJ

Broccoli for Honey

By Frank C. Pellett,
Texas.

HERE are several related plants belonging to the genus brassica which are well known as honey plants. Among them may be mentioned cabbage, turnip, rape and mustard. Broccoli is another which is of considerable importance to the beekeeper in some localities but which is rarely mentioned in beekeeping literature.

In the winter garden areas of the Southwest, particularly in the lower Rio Grande Valley of Texas, broccoli is grown very extensively for winter shipment to northern markets. It is a member of the cauliflower tribe which forms a rather small greenish head on the main stalk and after that is cut numerous smaller heads form on the branches which surround the stem.

After the heads are cut for market the plants continue to bloom freely for several weeks and the bright yellow flowers are visited by the bees. Since the broccoli is grown in extensive fields much winter pasture thus becomes available and local honeyflows of considerable extent occur in January, February and March.

But for the fact that bees are at their lowest point in population considerable surplus might be stored from this source. In most cases the broccoli serves as an abundant source

of early stimulation and helps greatly to build up the colonies to storing strength for the citrus flow which comes in late February and March.

The great difficulty with all winter honeyflows lies in the fact that so few bees are available. Old bees die off rapidly following the end of the fall flows and since brood rearing is greatly curtailed in early winter there is little opportunity for the beekeeper to secure a crop from such a source as broccoli when grown as a winter vegetable.



Broccoli continues to bloom freely for several weeks after the heads are cut for market.



Since broccoli is grown in large fields for winter shipments to northern markets, good honeyflows come in January and February, in the Rio Grande Valley of Texas.

Renovating Equipment from Diseased Colonies

By Frederick Garman,
Pennsylvania.

Procure an empty fifty-gallon and an empty thirty-gallon oil barrel. Knock out the head of each with a coal chisel and burn them out adding a little kerosene if necessary. Next, cut off ten inches from the bottom of the thirty-gallon barrel and ten inches from the top of the barrel. Discard the middle portion. Fasten wire screening to the top section, then you are ready to start cleanup operations.

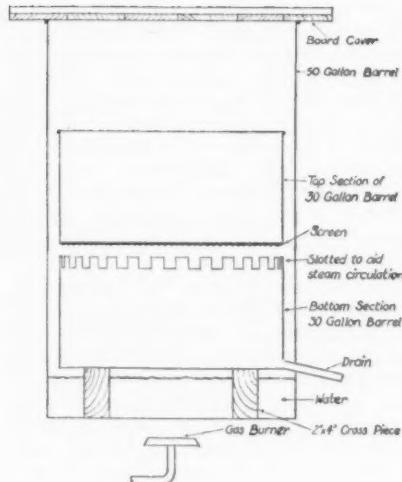
Place the fifty-gallon barrel with three or four inches of water in it on a small gas hotplate or other heating device. Also place two pieces of two-by-four sticks in the bottom of this larger barrel for support. Now set the bottom part of the 30-gallon barrel on the sticks inside the fifty-gallon barrel. On it place the top section of the small barrel with the screen wire or screen cloth between. The bottom section of the thirty-gallon barrel will thus act as a drip or receiving can and the top section will act as a screen or sieve, retaining the dirt and slumgum.

We are now ready for the first step which is simply rendering the wax and burning the slumgum and refuse. Stand frames on end in the top section or screen section, cover the whole with boards well soaked with linseed oil to prevent warping. A galvanized iron sheet would make a better cover but the other will answer and costs less.

Boil an hour, allow to cool somewhat and remove the cover carefully to avoid the live steam which will gush out. Wax and honey will have drained through the screen into the bottom receiving pan and may be led to the outside by means of a pipe bolted through the walls of the lower pan and through the outside barrel or the wax may be lifted out as a solid cake after cooling.

After rendering all the wax and honey, remove everything from within the large barrel. Burn the slumgum.

Now for disinfecting the equipment. Completely immerse every-



thing to be treated. Lye, chemically known as caustic soda, or sodium hydroxide, will completely dissolve propolis even in rather weak solutions. Propolis resembles stick shellac. If the hive has been painted with a linseed oil paint, this will be removed, too, the lye forming a linseed oil soap which is quite soluble. Five cents' worth of carbolic acid added to the lye solution will disinfect the whole outfit. The same solution may be used over several times adding a little fresh lye, a little fresh phenol or carbolic acid with each batch of equipment.

Boil the hives and frames an hour. After rinsing with clean water, the hives are ready to repaint and the frames to fix up.

ABJ

Live Wire California Breeders' Association

By J. E. Eckert.

The California Bee Breeders' Association was organized in August, 1933, for the purpose of promoting and encouraging the production of uniformly high quality queens and package bees in California. Only producers of package bees and queens are eligible to membership and each producer must agree in writing to abide by the articles of incorporation, the constitution, and by-laws of the Association before he is accepted as a member.

The by-laws of the Association include certain rules and regulations guaranteeing the production of queens and bees by the best methods known to commercial practice. They guarantee freedom from all bee diseases. They also include rules governing certain practices and principles in the preparation for shipment and sale of bees and queens that will assure the buyer of prompt and satisfactory service.

To qualify for membership, each

member must sign an agreement as follows: "As long as I am a member of the California Bee Breeders' Association, I will abide by its articles of incorporation, and its by-laws."

1. Members agree to ship package bees and queens only from apiaries or colonies known to be free of disease and so certified by the state apiary inspection service.

2. To ship only bees or queens of a strain that has been tested and found satisfactory for production, color, size, and behavior.

3. To use only the best of approved methods in the rearing of queen bees.

4. To maintain only pure bred colonies of a tested strain in the queen mating yards for the production of drones and to locate mating yards advantageously to influence proper mating.

5. To ship only queens that have been mated and laying satisfactorily, the queens to be not over three weeks old at the time of shipment.

6. To use only new cages for queens and package bees.

7. To use only the best of queen cage candy and only sugar syrup made of white granulated sugar in feeder cans.

8. To deliver queens and bees to the carrier in first-class condition and at such time and place as to assure delivery to the buyer in the shortest possible time.

9. To notify the big buyer at once of unavoidable delay in shipment.

10. To guarantee safe arrival of bees and queens and to replace at once those damaged provided the consignee secures a written statement signed by the express agent to cover the damage.

11. To refund upon demand money advanced if unable to fill orders satisfactorily.

12. To allow not more than 20 per cent extra weight of bees nor less than 10 per cent when filling cages.

13. To make no false representation for advertising purposes.

14. To abide by the decision of a supervisory board in case of a dispute with the customer, the board to consist of three members approved by a majority vote of the members of the Association.

The Association is fostering a definite research project in queen and package bee production. In cooperation with the University of California, the American Railway Express Agency and the Canadian Pacific Railway Company, an investigational trip was financed last year in which valuable data were obtained on environmental conditions affecting package bees in transit and at the time of installation.

The Association has voted to continue the experiments in cooperation with the provincial government of Alberta for three years and to donate

sixty two-story colonies to the University of California for further similar investigations.

That the Association is a live one is evidenced by the fact that twenty-nine out of a possible fifty-seven producers paid their dues for 1936 and the balance will undoubtedly do so.

The officers of the Association for 1936 are: President, T. C. Burleson, Colusa; Vice-President, C. Bassett,

Sutter; Secretary-Treasurer, T. L. Nicolaysen, Salida; Corresponding Secretary, J. E. Eckert, Davis; Board of Directors: the above officers and H. Peterman, Lathrop, and Willis Lynch, Tehama.

Mr. George Triphon of North Sacramento was elected the California representative to the Control Committee of the Marketing Agreement and T. C. Burleson as his alternate.

ABJ

FROM THE LITTLE BLUE KITCHEN



By Lida Keck-Wiggins

THE beautiful month of May will be with us when you come into the Little Blue Kitchen with Honey Lady for the final time. . . Yes, the parting of the ways has come, and if you have enjoyed our little chats together as much as has ye editor of this department then it has been a happy little interlude on the way of life. Meanwhile, and as we part, let Honey Lady suggest that if you are by way of entertaining a group of friends, that you do so by giving a May Morning Breakfast. The ideal time of course is the very first morning in May, but any morning will do, and here's how to make such a meal a very smart little function.

Before giving the menu Honey Lady wishes to say that while honey is mentioned several times throughout the meal, the hostess herself is the person to decide how many times it should appear. There CAN be, naturally, "too much of" even so good a thing as the nectar of the gods, i.e., our beloved honey.

Prepare nice grape fruits the night before. Loosen the fruit from the skin with a sharp knife. Separate the segments. Take out seeds and core. Then sweeten and leave in refrigerator until morning. Then if possible place on top of each portion several luscious strawberries. If these cannot be had, the ever reliable maraschino cherry makes a bit of decorative effect and adds a tangy flavor.

With the grape fruits serve very crisp saltines.

For the next course serve either griddle cakes or waffles, being sure that you keep frying them constantly so that no one is served a cold or soggy portion. Maple syrup, cane sugar syrup or honey should be served with these hot cakes.

Another course should be crisp

curls of breakfast bacon. These are delicious with either waffles or batter cakes.

The "drink" should be really good coffee and thick cream to MAKE it good.

Little fancy dishes of home made jelly add to this meal's effectiveness.

— o —

Waffles.

2 cups flour
2 teaspoonfuls baking powder
1 teaspoon salt
3 tablespoons melted butter
1 ½ cups milk
3 eggs

Directions

Sift dry ingredients; add yolks well beaten, milk, butter and stiffly beaten whites. Beat all well and drop with spoon point on hot irons. This, incidentally should be heated 15 to 20 minutes before using and naturally you will see to it that it is thoroughly greased. Salt fat pork is the best greaser for waffle irons.

Be sure to see to it that each waffle is a delicate brown. Under done or overdone waffles are an abomination.

In case you, as a resourceful hostess want to make a point of serving something different by way of a waffle, here is a tried and true recipe which Honey Lady has used to fine advantage. It is called

Virginia Waffles,

and there are made as follows:

1 cup white corn meal
2 cups boiling water
1 cup milk
2 ½ cups flour
2 eggs
1 teaspoonful salt
¼ cup melted butter
¼ cup sugar
3 teaspoonfuls baking powder

Directions

Cook meal in boiling water twenty minutes. Mix and sift dry ingredients and add alternately with milk. Add eggs well beaten and melted butter. Cook as you would any other waffle batter.

— o —

And now as to the "curls of bacon." Of all the ways Honey Lady has ever found of cooking bacon to a delicious brownness and crispness, that of grilling in the oven is by far the best.

Select as large a baking tin as you have (since there is to be company). Then if by any chance you have any wire grills standing up on little feet, place these on or in the pans, and lay the slices of bacon across the wires. Close the oven door and allow to drain and brown. In this case when you remove the grills your bacon will be lovely and crisp and free from objectionable greasiness. If you have no wire grills, lay the bacon flat in the pan and allow it to cook thoroughly, and then when taking out drain it on brown paper. You may have to return it a few moments to the oven to re-heat, but this is really a very satisfactory method. Also it is fine to have the bacon "taking care of itself," so to speak, while you are concentrating on the waffle batter and frying. Serve bacon on platters garnished with parsley.

Honey Lady is "old-fashioned" to the extent of preferring boiled coffee to the percolated variety. She measures a tablespoonful of GOOD coffee, medium coarse grind, to as many cups of cold water. To this blend she adds sufficient white of egg for the amount of coffee being made.

Let the water, coffee and egg stand together for at least an hour before placing over the flame. Then let the mixture come to boiling point and BOIL for several moments, watching it, however, that it doesn't boil over. Then set on back of stove, or some place where it will keep warm until you are ready to pour it. Of course you will have your strainer ready so that no grounds get into the cups and give your guests "grounds" for unpleasant comments afterwards.

If one prefers to serve a really-truly "country breakfast" there is nothing more delicious to city bred tongues than home-cured ham, fried to a delicate brownness and served with nest-fresh eggs fried in real churn butter. With such a breakfast of course one may serve the grapefruit appetizer, or even half an orange daintily prepared, rolls, toast or any hot bread and coffee. This merely by way of suggestion.

Here's hoping your May Morning Breakfast may be gay, jolly and a culinary success, and don't forget to see to it that the mildest and loveliest of honey is served along with other sweets.

Goodbye and good luck.

Chunk Honey Production

By Newman I. Lyle,
Iowa.



If there was ever a master in specialized honey production Lyle is that man. He may blush unseen when he reads such a eulogy at the front of his fine advice; but here it is anyway and we hope you get as much out of what he says as we have.



NEWMAN I. LYLE

LIKE nearly all beekeepers, I started by producing section honey. The lower cost of equipment was the principal reason. At that time a seventeen year old farm boy didn't have much money to invest in beekeeping equipment. The one colony mother gave me to experiment on in the spring was increased to five by fall. It swarmed three times and I bought one swarm. There was a continuous honeyflow all summer; honey prices were high and I made a little spending money. The amount is for-

gotten now but it was enough to cause a bad case of bee fever.

After a few years of enthusiastic increase, I decided to produce extracted honey. Constant reading of bee books and magazines convinced me of the need for large brood nests. Comparing cost of different equipment resulted in the selection of the modified Dadant hive. I realized the eight and ten-frame brood nests were too small. The principle of the large single brood nest seemed correct. Through the years the increase has been in these hives.

In 1927 a few cases of foulbrood were found. This was cared for in the orthodox manner, killing the bees and salvaging as much of the equipment as possible. Not however, until money and labor had been spent on the formalin gas delusion. In the spring of 1928 Mr. R. F. Remer suggested I produced chunk honey for Sioux Honey Association. Study of the subject coupled with a conference with a southern friend who had chunk honey experience decided the issue. Foulbrood would be easier to control, although troubles were to come. The decision from the standpoint of disease control was sound. From then to now new ideas came and some went. At this time management has settled down to a more or less routine matter.

In the spring the colonies are unpacked and carefully checked. This is usually done during the last two weeks in April. A few queens are ordered to arrive at this time to replace any that are inferior. Winter losses are replaced by packages, preferably, the three-pound size. They are introduced from April 25 to May 10 depending on the season. In this location early packages invariably produce less than those arriving between the above dates. Even May 15 to 20 packages will as a rule produce more than real early ones.

In our apiaries, Mrs. Lyle and I spend from May 1 to June 15 balancing colony strength. Extra strong colonies are drawn from to assist weak ones. In every yard there are always a few colonies so strong they wish to swarm. These are judiciously weakened, thus swarming is curbed and the result is an actual gain. As more colonies approach the swarming pitch we made up three-frame nuclei



Triple, three-comb, queen reservoir nucleus.



All ready to use when requeening by the nucleus method.



If the queen is O-K, she is clipped at the time of the ten day check over.

giving each a queen. When the queens are laying, checked as O-K, and clipped we are ready for the routine requeening. The less thrifty colonies are carefully examined. If the queen is not up to par, she is killed even though young. Two frames of brood, bees and honey from a nuclei, with the queen between them, are inserted at the edge of the brood nest. More bees and brood are given to the colony than taken away.

The addition of the extra bees and brood with a vigorous young queen cause the colony to leap ahead. A queen is introduced in the nuclei and in ten days to two weeks it is ready to be used again. All but the earliest requeening is done by this nuclei method. The advantages are: The queen is checked in a nuclei and if inferior little harm is done. She is killed and another queen introduced. By this method we may lose the time of a nuclei but not of a colony. Queens are more easily introduced in nuclei than in full colonies. In ten days the nuclei is examined and the queen is clipped if O-K, then the nuclei is again ready for use at any time.

We follow this system of requeening until late in the fall, even as late as November 12. No time is lost waiting for queens to arrive and then starting to lay. These few days gained often decides between a good surplus and little or no crop from that colony.

Colonies vary in their incentive to draw foundation and store honey. This characteristic is nearly as marked in chunk as section honey production. There is some variation in the strains



Introducing the queen in the shipping cage, to the nucleus. Screen against brood, candy end up.

from different queen breeders and of course between colonies. While trying to find the most suitable chunk honeybee, queens from most of the breeders were secured with varying success. Although some took to chunk supers better than others there was still much to be desired. A famous southern breeder assured us he would try to supply the type of queens required from breeding stock of our selection. Each fall we go over our records and a number of queens from outstanding colonies are selected and shipped south to be used in the production of our next year's queen requirements. This arrangement is very profitable to us as in this manner we are making a steady progress toward a more desirable bee for chunk honey production.

The years 1934 and 1935 were very poor ones for honey production in this location. However, there were a number of colonies that steadily gathered honey both seasons and produced a superior product. In the fall of 1935 six queens were selected from the best of these colonies for 1936 breeders. Five were two years old and one was three years old. All



From skyscrapers like this, we select the breeding queens. Note the staggering of the supers for ventilation.



Isolated mating yard in the South where the chosen mothers give us daughters for the next season.

produced better than twice the per colony average of all the yards. They showed the following characteristics to a marked degree: First, honey gathering ability; second, a tendency to build white evenly filled combs; third, willingness to jump into the supers and draw comb quickly; fourth, very prolific; fifth, rapid spring build up; sixth, no inclination to swarm or supersede. None of the six colonies ever built a queen cell; seventh, they seemed hardy as they wintered nearly perfect; eighth, gentle. From the above please do not assume these bees are perfect, they are not, but under poor conditions they did possess the above characteristics to a marked degree.

Unfortunately bees have to be forced into chunk supers somewhat as they do in sections. This requires a terrific pressure of bees. There must be so many that have no place to go but up into the supers. This requires very prolific stock that can be built up to strength for the honey-flow. This condition is also ideal for swarming especially during cool rainy weather like last spring. At that our swarming totaled less than one and one half per cent. Prevention was accomplished, because of the past selection of non-swarming stock, plenty of brood space, manipulation, supering before needed and ventilation. Even with the Modified hive some manipulation is necessary, this is accomplished by balancing, adding queens by nuclei method, etc.

We start supering with a modified extract. This is put on early enough to catch some dandelion honey. When the queen starts laying in it, it is placed below the brood nest and left there two or three weeks. At the beginning of the clover honeyflow the extract super is brought to the top and a chunk super placed on it. When work is started in the chunk super another is added on top. When work starts in chunk No. 2 it is placed on top of extract super under No. 1, No. 3 is placed on No. 1.

This system of rotation is kept going as long as supers are required. No excluders are used as it is hard enough to force bees into supers without fencing them out. A common objection to dispensing with excluders is that the queen will lay eggs in the chunk supers. They are unnecessary for this purpose when using the modified hive with its large natural brood nest. There the queen is more comfortable and she contentedly remains below. The extract super holds ninety-nine per cent of the expansion of very prolific queens.

Some beekeepers use excluders to keep pollen from being carried into the super. This is of little consequence if the queens are young and extremely vigorous. Workers gather pollen constantly when they can get it. If the queen shuts off egg laying

in the short gaps between flows pollen becomes too plentiful and is carried into the supers. Chunk honey production demands a queen that never stops egg laying until the flow is definitely ending.

To give ventilation in warm weather, supers are staggered about three quarter inches. As we remove the honey as rapidly as it is finished we are not troubled by the bees gnawing the corners of the combs or leaving unfinished corners.

It is unfortunate that these rousing colonies sometimes end the summer with insufficient honey in the hive for severe northwest Iowa winters. When this is the case, place the extract super under the brood nest in September so the bees will carry the honey up. We leave the super in this position when we pack the colonies for winter.

We prefer to put the foundation in supers only as they are needed using full sheets five-inch thin surplus in the modified shallow frames. The foundation is fastened with melted wax, about a teaspoonful to the frame is sufficient. Supers are usually prepared and used the same day. By so doing the foundation has less time to buckle and wave and results in straighter combs.

In summing up, chunk honey should only be produced if there is a demand for it. It is unprofitable to produce it on any but strong colonies. Chunk honey production requires a lot of close attention. Some colonies are better comb producers than others.

ABJ

Position Wanted

Can you help? We have an inquiry from R. Karofin, Restaurant Astoria, Princess Mary Street, Jerusalem, Palestine, asking about the possibility of securing a position with a beekeeper in this country. He says "I have studied beekeeping in France for two years, both theory and practice. I have read the best American books. I have had a year of practical work with an extensive beekeeper in Merville, near Toulon.

"Before establishing myself in beekeeping in one of the south villages of Palestine, I would like to undertake practical work for at least one year for one of America's extensive beekeepers.

"No country in Europe is comparable to U. S. for its methods and implements in beekeeping work. To get an entrance to the country I must have a certificate from the beekeeper who might employ me stating he is willing to employ me for a period of a year. With this I will be able to get a proper visa from the American Consulate here. I must know how much to expect in the way of wages."

[If you are interested in giving this young man an opportunity to improve himself, write to him at the address given.—Ed.]

Yard Records

By Elmer Carroll,
Michigan.

Many favorable comments and thanks were received for the article "Bookkeeping for Beekeepers" in the August issue of the American Bee Journal. Also many queries such as, "how about individual hive records?" and "how about yard records?"

For the so-called back lot beekeeper, who keeps a few colonies of bees as a hobby, individual hive records are a fascination and an interest.

I recall having seen a yard book several years ago that belonged to a lady who lived next door. She had thirty colonies of bees. Each hive had a name and a separate entry. Every pound of honey was accounted for. For instance under "Queen Mary" we found this entry:

August 15	
48 sections—fancy.	
17 sections—No. 1.	
3 sections—broken in handling (eaten).	

But when a person gets into the beekeeping business on a commercial scale he finds little time for individual hive records, except for a few colonies. With one thousand to two thousand colonies to account for, corners must be cut. And yard records take the place of hive records. Here from year to year is information concerning the value of location for spring feed, surplus production, and wintering when wintering is done at the yard.

In 1919 I kept yard records for twenty outyards. Each yard was named and numbered. Supers were kept separate during the process of extracting. Here is one yard's entries:

Harbor Yard—No. 4.	
No. colonies	Honey
April 15—from cellar	63
April 30—20 p kgs.	
bees — uniting and feeding	75
Fed 200 lbs. honey.	
May 15—clip queens, deep supers	75
May 30—yard check	77
June 15—super	80
June 30—super	80
July 8—super	80
July 17—super	79
July 30—check	79
Aug. 10—took honey off	78
Aug. 12 — extracted yard 4	7260 lbs.
Aug. 31 — requeened 42 colonies	77
Sept. 16—took honey off—extracted	1230 lbs.
Oct. 1—check	77
Nov. 15—cellar	76

The Clear Brood Nest Method

By E. L. Sechrist,
Tahiti.

Summary of Parts I and II

THE control of swarming is the foundation of success in honey getting. A successful beekeeper will work out a method of management which gives complete control of the queen and of the colony with the least labor.

To get surplus honey profitably, the colony which stores and swarms must be transferred into a colony which will continue to store without swarming. Brood nests must allow the queen to lay as many eggs as are needed, immediately under the supers in which honey is to be stored.

The essential factors in honey getting are adequate colony population, location in a good producing area, prompt beginning of work in supers, continuation of this work without interruption, continuous replacement of bees that die, and enough strength at the end of the season so that the colony will reach the next honeyflow in good condition.

This means a good queen, plenty of stores, a large brood chamber

under the super, control of swarming, space to store honey.

Above all, the usable brood nest must be large enough for the queen to lay as many eggs as are needed to build up a colony of honey storing at just the right time.

Part III The Free Queen Method

The six essential factors in securing a good crop of surplus honey having been discussed in part two, it is now necessary to consider the method of management which may be used to put these essential factors in operation in the apiary.

All methods of management may be classified under (1) the free queen method or (2) the clear brood nest method.

The free queen method includes a system of management in which the operator does not intentionally confine the queen to a certain part of the hive, but allows her to have free range as far as colony conditions permit, through the brood chamber and supers. She may be unintention-

Honey Getting

PART III

ally confined and restricted in egg laying space by poor combs, by storage of nectar or honey in the brood combs, or by too few supers for storing honey.

Although much honey is produced when the queen is permitted to move freely throughout the hive and to establish a brood nest anywhere, this method has little place in commercial honey getting. It is the one followed by the beekeeper who does little more than locate his bees in a good honey region, put on plenty of supers, take off the honey and market it. He hopes, by little attention and keeping large numbers of colonies, to get a large amount of honey with less per colony production.

This free method while sometimes successful, is also the one in which "bad luck" is most often experienced. Though seemingly simple, it becomes complicated by crowded brood nests, poor combs, much swarming, poor crops, poor wintering, and all the ills that beekeeping is heir to, as well as by cross bees which become a nuisance and a danger except in isolated locations.

Operators using this method usually brush or shake bees from the combs in great haste, injuring many and surrounding themselves with a cloud of angry, stinging insects, ready to pounce on any exposed honey as soon as the hive is opened. It is becoming more difficult to obtain locations where bees can be handled in this rough way. The beekeeper who keeps his bees as gentle as he would if he lived in a city, experiences little difficulty in securing his choice of locations.

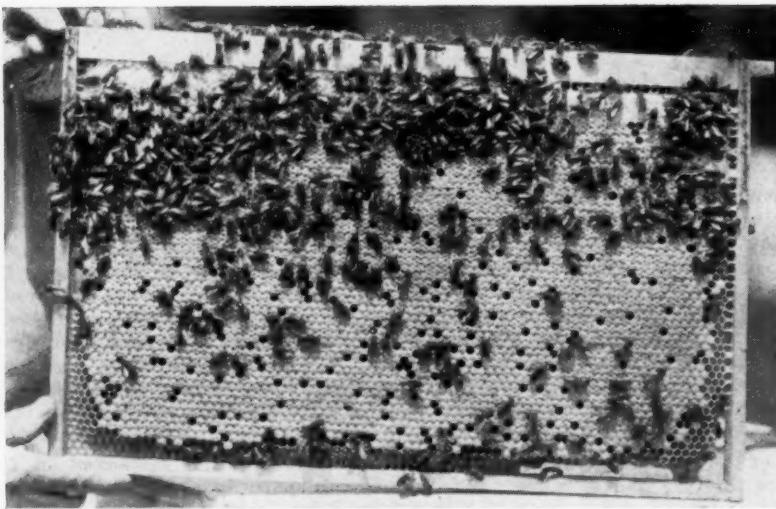
The free queen method may be used successfully only by chance or by an expert operator in locations where its use will not interfere with friendly association with his neighbors.

The Clear Brood Nest Method

The clear brood nest method includes those systems of management in which the beekeeper confines the queen to the brood chamber of one or more hive bodies in which he tries to maintain a brood nest of ample



In a honeybound brood nest, egg laying may be restricted to a small area.



A clear brood nest should give the queen laying freedom to produce brood in regular concentric masses.

proportions with enough clear, usable worker cells to permit the queen to lay freely during those times when her offspring will be of value to him. The mere use of the queen excluder does not produce a clear brood nest but it may be used as a help to secure one although if the queen excluders are used without consideration of the behaviour of bees under management for honey production, the result will be restricted instead of clear brood nests.

The Essentials of Practice in All Clear Brood Nest Systems

Eight essentials practiced by successful operators are here given, so a progressive beekeeper may consider them in connection with different systems of management and formulate a plan best adapted to his own conditions. All these practices are subject to modification according to local conditions and personal preferences.

(1) Effort is made to keep the brood chamber full of all-worker combs and clear enough of honey and sealed brood so there is always plenty of room for the queen to deposit as many eggs as needed. This is a primary essential of any clear brood nest system. The use of queen excluders or of some equally effective method for controlling the location of the brood nest is necessary.

(2) All colonies are kept approximately uniform in strength. In spring they should be in standard spring condition. In the honeyflow they should be of standard honey storing strength.

(3) All colonies are kept queen-right by requeening whenever the desired uniformity is lacking. Whenever conditions indicate the need of it, usually annually or oftener, the

queen is replaced so the colony is queen-right at all times when it should be queenright. This is important.

(4) Nuclei in full sized hives are commonly employed to provide a stock of queens for replacement and to make increase.

(5) All laying queens are clipped, or similar control and record is obtained in some other way.

(6) For swarm control, each apiary is visited or worked every eight or ten days during the swarming season. If the system used minimizes swarming, less frequent visits are enough.

(7) Colonies are handled in such a way that the bees remain good tempered.

(8) Control or eradication of American foulbrood and other bee diseases is insured by frequent inspection and careful management.

Three systems of management by the clear brood nest method are included as follows: (1) the one-story clear brood nest system using only one hive body as the brood chamber; (2) the two-story brood clear nest system using two hive bodies as the brood chamber throughout the year; and, (3) the two-story clear brood nest system using two hive bodies for wintering and for the brood chamber until the beginning of the honeyflow, after which the colony is confined to one hive body, the second being additions, the colony may be wintered in on hive body, the second being added early in the spring.

All these systems are good if practiced intelligently, but to prevent confusion and loss of time, two systems should not be used in the same apiary. The one to be used depends on the preference of the beekeeper and on his experience and on his equipment, as well as on the location and whether comb or extracted honey is to be produced.

For the efficient production of extracted honey, either of the two-story clear brood nest systems is satisfactory. They require less labor and more equipment than the one-story clear brood nest system which is particularly well adapted to the production of comb honey. This one-story system requires a maximum of labor unless the brood chamber is larger than the usual ten-frame Langstroth. It also requires a minimum of equipment. It is especially valuable in studying the behavior of bees and keeping in close touch with colony performance and locality factors while the operator is working out a system of management adapted to his personality and location.

This discussion of management applies to the use of Italian bees and the Langstroth hive. If some other race or a different hive is used, modifications of procedure are necessary.

Discussion of the Eight Essentials of Management

(1) Securing and maintaining a clear brood nest.

Only good, all worker combs should be tolerated in the brood chamber, whether it is one or two hive bodies. It is important that at least eight combs and, in a two-story system of management, preferably twelve, be kept in condition for the queen to use. If more brood is produced than the colony needs, the surplus may well be used in equalizing colonies and making them uniform in strength, or in building up nuclei.

Particularly should all brood be removed from all colonies that have swarmed or that want to swarm. All, or nearly all the brood is to be removed from a colony that has swarmed, so that it may have a clear brood nest, but it is neither necessary nor advisable to shake such colonies into new brood chambers.

"Clear brood nest" has already been defined as a brood nest of ample proportions with enough clear and usable worker cells to permit the queen to lay freely during those parts of the year when her offspring will be valuable to the operator.

When removing brood or honey from brood chambers that are becoming crowded or in which preparations for swarming are under way, a comb or two of mostly sealed brood is taken out at a time, and replaced with comb foundation, this procedure being repeated every eight or ten days. Replacing full combs with empty ones seldom serves any good end in preserving a clear brood nest, and is often an injury, as such combs are frequently filled with honey and sealed without an egg having been laid in them.

In a few locations this is done even when comb foundation is used in replacing the full combs. Sealed, rather than unsealed brood, is taken

(Please turn to page 248)

The Amusing Adventures of Flighty



Flighty Leaves Detroit

APRIL 1, 1936.

Hello, folks! They've stopped the old bus here at Grand Rapids, so I'll write a few lines and then swing my way over to see my good friend, Bert Woodman.

Friends write and ask me where I am. First, I am in northern Michigan, then Florida, then Detroit. Right now I am leaving Detroit behind me unless the wife discovers we have left something. She is giving the load the once over to see if I am comfortable back here on the trailer, and whether or not I'm wearing out my brown shoes dragging them on the pavement.

She looks relieved. I guess we don't have to go back. Not that I am glad to leave Detroit. But if we are going to get any of that northern Michigan honey, we've got to get up there.

— o —

The wife has asked why people call me "Flighty." Here it is—"flighty, indulging in flights of imagination, mildly insane." (I'm not telling her why.)

We landed in Detroit last fall. I had said to the wife, "Bartlett has all the fish eating out of his hand, so there is no use trying our luck through the ice on Lake Charlevoix this winter. Let's go down and take a look at the bright lights and see another national convention."

The opening day of this convention rolled around and there was I five miles from the Statler, with my nozzle wrapped up in a bed sheet. One of those moist colds.

After that disappointment wore off, I decided to try something I had wanted to do for a long time. Every time I met anybody I talked honey. It got so people went to bed early or shut off the radio when I rang the door bell, for here was Flighty back to talk about honey again.

However, I not only took orders for next year, but found the reason people do not buy more honey. It is because they are not reminded of it in the proper way. The tempo of city

life is faster than ours and after the city people read an ad in the paper, they are apt to forget about honey until the next time their plate is stacked with steaming flapjacks. The way to sell honey to city folks is to make them see it all the time, either in your hand at the door, or on display in the store.

— o —

Another thing I wanted to try out was a street car. I said to the conductor: "Street cars have changed a lot. Twenty years ago I rode street cars to work in this town. The cars were mounted on single tracks, had open platforms. Rather than walk half a block, I used to jump from the car right in front of the store and run right into it. One morning I got off on the wrong foot. I thought I was going to strike a street cleaner, but luck was with him. I missed, and fell into a pile of refuse in front of



Flighty leaves Detroit, brown shoes dragging.



Mr. Flighty, himself.

his broom. I didn't seem to get hurt. Piles of street debris were larger before cars were so plentiful."

With the conductor in a pleasant mood, I said, "Now then, honey—" Just then a big blonde came swiveling toward the fare-box, glaring at me and said, "You fresh thing, you!"

The conductor laughed too loud and motioned the fair-haired one to move on. I'm glad she moved. I wanted to warp my crutch over her shoulder. The idea of interrupting when I was getting commercial!

— o —

A few days ago, an Englishman in the neighborhood invited me to his house. I listened while he told me tales of Merrie Olde England.

"Yes, sir," he said, "I am glad King Edward is going to marry. Every hive needs a queen. This marriage will make everyone in England happy. I have seen the present King Edward, his father, his grandfather, his great-grandmother, Queen Victoria. Ah, there was a queen! At the coronation of King Edward the Seventh, everyone took a vacation. Shops closed, and after a few sophistication-busters at the pub, everybody belonged to one big happy family, and sang 'The Honeysuckle and the Bee.'

I said, "English history is very interesting."

"Yes," he replied; "I wish my children thought so, too."

"Mary," he called, "Do you know Admiral Beatty is dead? Bet you don't even know whom I mean."

I know of Clyde Beatty, the lion tamer."

"Ah, shucks! Bet you don't know who Nelson was."

"Well, Pop, there is Nelson Eddy of the movies."

The Englishman turned to me and winked.

— o —

We buy some of our groceries from a door-to-door salesman. A while back he said, "How about some honey this week?" Now here was a

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man after my own heart (and my money). So I asked "Is it good? What do you know about honey?" "Not much," he said, "It's hard to sell after it starts to granulate." He left the house with an order for a pail of honey and a lot of sales information regarding that sweet.

Saturday came around and so did the door-to-door man. I checked over the groceries and picked up the pail of honey. "This honey," I said, "came from Shericks." "Ha, ha," laughed Mrs. Flighty, "maybe we will be eating our own honey." (We had sold Shericks a sizable order earlier.) "Well, perhaps," the salesman said, "but here is something that is true. This week I sold a lot of honey, thanks to you." "Don't mention it," I said, "That's what I came down here for."

"You can't fool me," he interrupted, "I saw the stork stalking up and down your porch until his legs were worn down like a duck's before you let him in."

— o —

Anyway, Little Miss Flighty is a honey. The wife says she will be all honey, if she gives her all the honey I want her to.

Well, the wife is out of the car again, looking around. Guess we are ready to take off.

I just asked the boss for the pictures Mr. Cari Cature took of me. I want to send them to Mr. Cale. "Here they are," she said, pulling them out of her purse. "I didn't think you wanted them. The only thing that looks like you is that weathervane nose of yours."

Everyone picks on my nose; even the bees.

The wife promises to buy me a postage stamp when we get to the next town, so if nothing happens, you'll get to see the pictures yet. I'll write again. We're off.

"Flighty."

— ABJ —

The Clear Brood Nest Method

(Continued from page 246)

away where colonies are worked at intervals of eight or ten days; but if visits are less frequent it is better practice to take unsealed brood because sealed brood would emerge in eight or ten days while unsealed brood would occupy cells a longer time, thus spoiling the plan to keep a clear brood nest.

When the system of management used involves only a few seasonal inspections of colonies, nearly all the brood in the brood nest may, at one operation, be separated from the queen, as in Demareeing, and the queen allowed to establish a new brood nest. This is effective for swarm control and is a common practice.

It is usually preferable to take

away combs of sealed brood and to leave unsealed brood in the brood chamber where there are plenty of nurse bees, because unsealed brood is likely to die if removed from a brood nest and placed where there are not enough nurse bees to care for it, and because if unsealed brood is taken away and only sealed brood remains, the colony is likely to become unbalanced and swarm, while if sealed brood is removed, emerging bees are distributed and swarming is restrained.

Because the brood nest must not become honey-bound, combs full of honey are also removed from it and replaced by comb foundation at times when such manipulation is necessary to preserve a clear brood nest. Because colonies vary in their behavior in rearing brood and storing honey, different strains and races of bees are more or less likely to allow the brood nest to become honey-bound. Difficulty in preserving a clear brood nest and in preventing it from becoming honey-bound also depends on the strength and condition of the colony and on the aptitude of queens to go anywhere at certain times, to find room to lay; while others, may confine their egg laying to compact, restricted areas, the bees storing honey closely around a small brood nest, even though it is too small for the development of a strong colony. The latter condition usually occurs only when a queen is poor or because a colony is below the standard condition for the season.

Importance of Young Queens and of Queen Excluders in Maintaining a Clear Brood Nest

The presence of a young, active queen helps to keep the brood nest clear of honey since the bees readily remove honey to give her room for egg laying. Good young queens usually produce more brood than older ones but even moderately good queens produce more brood in a brood chamber kept clear for their use and, under any clear brood nest system, better results are obtained with moderately good queens than is usual under the free queen method.

Under most conditions, except during the production of comb honey, queen excluders are of value in maintaining a clear brood nest. It is said by some that queen excluders are honey excluders. This is apparently true only when the operator neglects to keep the brood nest clear for the use of the queen. Then the use of a queen excluder does result in a small colony and a small crop. When queen excluders are used successfully, the brood nest to which the queen is confined is kept in condition for brood rearing by removing sufficient honey and brood, or by shifting the queen to another brood chamber when the first one becomes filled.

When using full depth combs in both brood chambers and supers in producing extracted honey, an excluder is necessary to keep the queen out of the supers. When, however, full depth or deeper combs are used only in the brood chamber and shallow combs in the supers, it is not always necessary to use a queen excluder, especially if a food chamber or other shallow super, pretty well filled with honey, is kept just above the brood nest and under the supers that are being filled.

It is not good practice, however, to permit sealing in this shallow super next to the brood before the colony is working well in several supers above it, since this may lead to swarming.

If the bees do not work well above this shallow super of sealed honey, it should be removed. If the shallow super of combs has never contained brood, the queen does not go up so readily as when the super combs are old and dark but even with new combs unless there is plenty of room in the brood nest as well as some drone comb, the queen may go up into the supers if queen excluders are not used.

If the queen is permitted in the spring to begin to lay in a shallow super or a food chamber, she must not be confined to that shallow super by being blocked off from other brood space by sealed honey or otherwise.

Beekeepers who are successful in maintaining a clear brood nest without the use of queen excluders permit the queen to lay where she will only as long as she keeps the brood nest where they want it. Then they see to it that she lays where they wish the brood nest to be. To do this requires more skill and knowledge of bee behavior and honeyflow conditions than is required to use queen excluders successfully.

In the production of bulk comb honey, the queen must also be kept out of the supers. Usually a queen excluder is used, but it is sometimes possible to do without one just as it may be when extracted honey is being produced in shallow supers.

ABJ

B. Columbia Figures

The approximate production of honey in British Columbia for 1935 was 1,291,242 pounds which is 221,833 pounds short of the figures for 1934. It is a production of 57 pounds per colony according to A. W. Finlay, Provincial Apiarist. Okanagan, Shuswap and Thomson Valleys show an average of 70 pounds per colony; Kootenay District, 74 1/2 pounds; Lower Frazer Valley, 52 pounds; Vancouver Island and Greater Vancouver, 45 pounds; central British Columbia, 55 pounds.

F. H. Fullerton,
British Columbia.

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THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

Blue Flowered Sweet Clover

You mentioned last fall you had obtained seed of blue-flowered or balsam sweet clover in France. Please let me know the name and address of the seed man that supplied you and the French name of this plant. I would like to get a small quantity of the seed through a friend now in Paris.

Can you tell me whether this variety, like the ordinary white sweet clover, can be counted on to come up when sowed on bare ground in the early spring?

WASHINGTON, D. C.

Answer.—The sweet clover you mention is Trigonella caerulea in this country. The seed was secured from Vilmerin in Paris and in his price list it is called Melilotus caerulea. To some it is known as blue flowered sweet clover, to others balsam clover. It is very different from the common sweet clover.

We know little as yet about the particular conditions this plant requires but hope from reports of those who have tried it to secure such information. Seed may be secured now from L. R. Robson, 314 Fifth Avenue North, Saskatoon, Saskatchewan, Canada.

ABJ

Investing in the Bee Business

A friend has offered to loan me \$2,000.00 to start in the bee business. I have had fifteen years of experience. Do you think it possible to pay the money back in one year or do you think it will take longer?

OREGON.

Answer.—Whether you can pay back the \$2,000 in one year depends on what you buy with the \$2,000 and what the crop is in your locality. If you expect to buy new equipment and bees and start from "scratch" it is doubtful if you can pay for the bees and equipment the first year.

If you have a chance to buy bees already established with supers in abundance and get a bargain, it might be possible to pay back the full \$2,000 which you borrow. This would depend also on management and on the crop.

ABJ

Wires in Treated Frames

In cleaning up frames from foulbrood, we steam the wax out, then boil the frames in lye water leaving the wire intact. Will this wire be all right to use again or will there be too much residue on it to be accepted by the bees?

ILLINOIS.

Answer.—We prefer to tighten the wires in the treated frames before putting in the foundation. The lye and other residue may be washed off the wires by immersing the frames in hot water directly after the original lye bath. Use the lye first and then hot water and you will have no trouble.

ABJ

Removing Burr-Combs

In going through the hives every eight or nine days, do you scrape off all the burr-combs?

WISCONSIN.

Answer.—Whether you remove the burr-combs is a matter of preference. Everybody likes to have clean well-kept hives and by removing burr-combs occasionally we help

to make them so. The beekeeper with a large number of colonies or little time will not go to the trouble of taking out superfluous combs as often as you mention.

ABJ

Brass or Copper in Honey Gates?

Please tell me if a brass or copper faucet used as a honey gate will poison the honey and make it unfit for use when used on a settling tank or capping melter.

MINNESOTA.

(Answered by M. J. Deyell, Editor, Gleanings in Bee Culture.)—Answering your question, as far as we know brass or copper faucets may be used satisfactorily as a honey gate for either a settling tank or capping melter. As long as honey is not sour, we do not believe there would be any particular action on the copper or brass to damage the honey or make it unfit for human consumption.

ABJ

Combs from Dysenteric Colonies

I had a colony die in winter. Apparently they could not move over to other combs of honey. There is considerable dysentery in the hives. Is this contagious?

MISSOURI.

Answer.—No, dysentery is not contagious. If there should be American foulbrood in the combs that can be carried by giving combs to other bees but dysentery is not at all contagious and combs from such a colony may be used again.

ABJ

Boiling Frames in Lye Water

Is the practice of boiling frames in lye water still recommended in the light of results?

WASHINGTON.

Answer.—Yes, it is good practice. Use one can of lye to fifty gallons of water, boil 15 to 20 minutes, then put the frames into a batch of clear, hot water to wash them off. Dry the frames, tighten them, put in new wires and new foundation and you're ready to go again. This is common practice and we recommend it where the labor can be performed without extra cost. However, if you have to pay for the labor, it is often better to buy new frames.

ABJ

Moving Bees

How would you consider the best way to prepare a colony of bees for moving?

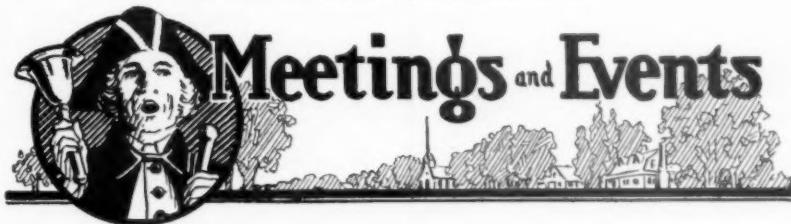
NEW YORK.

Answer.—If the bees are to be moved a long distance, the need for preparation will be greater. To move bees a short distance, say a few miles, would simply shut up the entrance at night and move them with no preparation, setting them on the truck and driving carefully. We have moved them without closing the entrance, taking them up after dark and putting them in the truck and taking them to their new location provided the move may be made without stop after dark.

However, if you are to move a long distance, it is better to close the entrance entirely, put a deep screen on the top of each colony, say about four inches deep. Nail ordinary window screen on a four inch rim

and staple it to the hive top. After dark close the entrance of the hive, set the bees on their conveyance and move them when it is the coolest part of the day.

IBJ



Georgia Bee-Shippers

There was a meeting of the Georgia Bee-Shippers at Tifton, March 27th. A number of new members were present. The meeting was constructive. The Georgia shippers are optimistic and believe all available bees will be sold. The state has had a good spring honeyflow, which will put bees in good condition for shipping.

A. V. Dowling,
State Inspector.

— o —

Life of Bee at Texas Centennial.

The life of the bee will be shown to visitors to the Texas Centennial Exposition at Dallas this summer. A glass hive, every part of the interior visible, will house a colony. A hollow glass tube, four inches in diameter and twelve feet high, will provide an exit so the bees will be able to carry on their activities uninterrupted.

J. A. Moore, director of agricultural exhibits, says that visitors will be able to see the bees during the entire time of the Exposition.

— o —

Cook - Du Page (Ill.) Activities

Are you prepared for a banner year? Right now conditions look favorable. The new administration of Cook - Du Page Association is anxious to continue as a force for good among beekeepers in the community, and an influence in the industry in the state. We would like you for a member if you live in the vicinity, or in Cook or Du Page counties.

The last meeting at Gage Park March 7th was a huge success. We welcome you at future meetings. We aim to make this association yours, and we are open to suggestions and criticism. Let us hear from you.

C. A. Olson,
Secretary-Treasurer.

— o —

Rothamsted Meeting to Discuss Bee Disease Insurance

A meeting is announced to be held at Rothamsted Experimental Station in England, Saturday, May 2nd to discuss a co-operative insurance scheme between beekeepers' associations, under which members will receive compensation for losses from

foulbrood.

The following matters will be discussed: (a) Registration under the Industrial and Provident Societies Acts. (b) Formation of a committee of seven members to apply for registration. (c) Consideration of By-Laws. (d) Raising of a Capital Fund.

The following proposals were formulated as a basis for the discussion:

(1) That each association be responsible for the collection of premiums from its members and no beekeepers be admitted except through associations.

(2) An annual premium to be a minimum of 6d per member up to six stocks. Any member owning more than six stocks to pay 1d per stock per year for each additional stock.

(3) The 6d per annum per member should be collected automatically by addition to the membership fee of each association.

(4) At first, the scheme is to be confined to disease, and compensation is to be paid only after instructions for treatment or destruction have been carried out. Compensation to be paid on a sliding scale, taking into account the time of year for bees, and the age and quality for combs. An upper limit of compensation to be fixed per colony and per beekeeper. No compensation to be paid if the disease is not reported until the colony is dead. Compensation to be on a lower scale, if treatments are successful.

(5) Inspection and recommendations to be made by local officers appointed by local associations.

(6) The capital to be raised by contributions from local associations in proportion to membership. As a basis for discussion a guarantee of £10 per 100 members is suggested.

The objects of the society are to insure against risks to bees, hives and appliances, for losses occasioned by disease; to encourage and assist the eradication of disease; to carry on as agents for the sale of bees and equipment.

— o —

Yakima County's New Officers

Yakima, Washington Association: President, C. H. Shader of Sunny-

side; Vice President, J. B. Espy of White Swan; Secretary-Treasurer, R. C. Immele of Toppenish, and member of the executive board, C. C. Baker.

The association is working on contracts and leases for rental of bees for pollination purposes.

I. L. Neill,
Washington.

— o —

Death of H. L. Case

Herbert Lewis Case, 87, a life-long beekeeper, died at West Avenue, Canandaigua, New York, recently.

Mr. Case was born in Bristol, New York, in 1848 and was educated at the old Canandaigua Academy, and became a fruit grower at Bristol until 1899 when he moved to Canandaigua, to become interested in beekeeping and was finally one of the leading authorities of his region.

He became interested in national finance as early as 1892 and with other leaders of the old National People's Party, became convinced that prosperity depended upon the abandonment of the gold standard, and the backing of currency by some other standard of value. He was nominated for Congress from the 28th District, and with other officials of the National People's Party, toured the eastern states in support of their platform. In later years he became a delegate to the National Democratic Convention supporting Bryan for President.

He was one of the organizers of the Alliance Mutual Fire Insurance Company and was a member of the First Congregational Church.

He is survived by his widow, Mrs. Mary Van de Viver Case; two sons, Roy H. Case of Seattle, and Attorney Earl F. Case of Rochester; a daughter, Mrs. William E. Tones of Hopewell; and an adopted daughter, Evelyn Moore, of Rochester. There are also 13 grandchildren and 5 great-grandchildren.

— o —

Winter Losses in Washington

Varying reports have been received as to winter losses. Some beekeepers report bees coming through the long and unusually severe winter in good condition, and others with losses heavier than normal. Those surviving are expected to build up in good condition.

I. L. Neill,
Washington.

— o —

Increased Demand for Pollination

Much greater demand for bees for pollinating orchards exists this spring in the Yakima Valley than for many years, according to members of the Yakima County Association. Many orchardists are ordering twice as many colonies this spring as they used a year ago.

Last year, a heavy freeze injured

have been scheduled, such as "Anatomy of the Honey Bee," by Montgomery; "Queen Rearing for Honey Production," by Kruse; "Factors Influencing Honey in Storage," by Milum; "The Value of Honey As a Food," and "The Use of Honey in the Home," by Mrs. Jensen. "Honey Hunks" will be demonstrated by Hilbert and a complete modern extracting outfit will be demonstrated in operation by Woodman. Practical queen introduction will be demonstrated by Starkey and removing the crop with carbolic acid will be demonstrated by Cale. There will also be a demonstration of the preparation of sections. At the noon hour there will be fried catfish (on the host) and a concert by a 30-piece band.

There will be many of the big fellows of the beekeeping fraternity that we were unable to accommodate on the program. Realizing that they should be heard as well as seen we are devoting one hour of our program for five minute talks from these fellows.

There will be a cake contest open to the world, the only requisite being honey must be used as a sweetener and the recipe must accompany the cake. A barrel of flour will be first prize and on down to silk hose for fifth place. There will also be a honey contest, both combs and extracted, light and amber and the prizes will be inviting. We are trying to arrange for a filterer demonstration.

Five thousand programs are being issued and distributed to actual beekeepers. Each program will be numbered and at least one number and maybe two will be worth a nice reward when presented at the meet.

Another interesting feature of the Round Up will be report on study being made with co-operation of Purdue University on the various races of bees, a study of prolificness, temperature influences, propolizing, finish, wintering, etc. This project is being conducted in Mr. Stewart's (the host) home yard and will be for inspection at the Round Up with a Purdue man in charge.

— o —

New Officers for Champaign County (Illinois) Association

At a reorganization meeting held Saturday, February 1st, the following officers were elected for the Champaign, Illinois, County Beekeepers' Association: President, Rev. E. J. Rees, Route 2, Urbana; Vice-president, James Kaunmacher, Route 5, Martinsville; Secretary, V. G. Milum, Urbana.

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Two-pound Package with Young Queen	2.45 each
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Each additional pound of bees	.70 each

15% discount to dealers.
Bees shipped in extremely light cages made of tough material, right dimensions and easy to manipulate. Health certificate. Safe arrival and satisfaction guaranteed. Shipments from our point will save you express charges. Write for circular.

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Hurry!

That empty hive can be made profitable by the addition of a package of bees.

Three band Italians certified and accredited by the State Department of Agriculture.

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Prices Reduced After June 1

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10 TONS OF
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**EBY'S Busy Bee Brand
FOUNDATION**

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Let us ship you package bees, nuclei or full colonies from the South by express or truck. I. A. Stoller, Northern queen breeder and honey producer, in charge of our southern shipping business. All packages and nuclei headed by Stoller Queens. Write us.

When better foundation is made, Eby will make it.

When better queens are reared, Stoller will raise them.

Ask the men who use them. Reference Dun & Bradstreet.

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Package Bees & Queens
Quality :: Service :: Prices

Give us a trial and be convinced. We practice the Golden Rule.

SELECT LAYING QUEEN	\$.75
TWO-POUND PACKAGE WITH QUEEN	2.45
THREE-POUND PACKAGE WITH QUEEN	3.15

Italians or Caucasians. 15% discount allowed to dealers.

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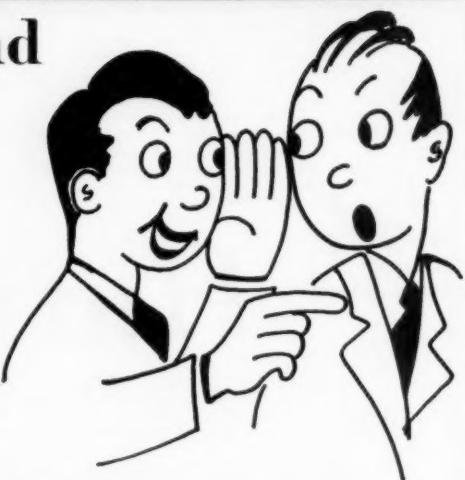
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Will Tell You**

That you can depend upon us to give you a FAIR DEAL. We realize that when we accept your money for bees and queens, we have an obligation to perform. To ship you only the very best stock, carefully raised, promptly shipped to reach you in first class condition.

We invite you to compare our STOCK, SERVICE and PACKAGES with any offered in this Country. Our free descriptive Booklet is yours for the asking. Write for it today.



**THOS. C. BURLESON CO.
BOX 540**

COLUSA, CALIFORNIA

**WANTED White and Am-
ber Extracted
Honey 7½c and 5c. Containers
returned. Write us.**

**THE FRED W. MUTH CO.
229 WALNUT STREET**

CINCINNATI, OHIO



3-banded Italian Queens and Package Bees

SHIPPED THE DAY YOU WANT THEM, BETTER SERVICE, HIGH-
ER GRADE PACKAGES AND QUEENS.

SPECIAL NIGHT EXPRESS INSURES FEW LOSSES.
HEALTH CERTIFICATE WITH EACH SHIPMENT.

Untested queens, each	\$.75
2-lb pkg. bees with queen	2.45
3-lb. pkg. bees with queen	3.15
Each additional pound of bees	.70

For queenless packages, deduct price of queen.

For immediate shipment, send your order to

W. O. GIBBS CO., Box 81, Brookfield, Georgia

To assure yourself of obtaining the best of supplies, read the ads of A-B-J—when writing to them, mention A-B-J

PACKAGE BEES AND ITALIAN QUEENS FOR 1936

If You Need One or One Thousand
Let Me Quote You.
R. E. LABARRE
Sbasta Co., Cottonwood, California.

ATTENTION PLEASE!

Here we are again—
Stevenson's GOLDEN
ITALIAN QUEENS,
raised the very best
way in southern Lou-
isiana, where we have
a very early and con-
tinuous honeyflow.

This natural environment causes our
bees to feed us abundantly with just the
right food to develop us properly and
make us large, uniform, and very pro-
lific—REAL QUEENS OF QUALITY.
Our progeny are large, very gentle, and
the best of honey producers. Write to
STEVENSON'S APIARIES, Westwego, La.,
for descriptive circular. Quotations on
package bees and queens as per Market-
ing Agreement.

STATEMENT OF OWNERSHIP

Statement of the ownership, management,
circulation, etc., required by the Act of Congress
of August 24, 1912, of American Bee
Journal, published monthly at Hamilton,
Illinois, for April 1, 1936.

STATE OF ILLINOIS,
County of Hancock, ss.

Before me, a notary public in and for the
state and county aforesaid, personally ap-
peared M. G. Dadant, who, having been duly sworn
according to law, deposes and says that he is the business manager of the
American Bee Journal, and that the following is, to the best of his knowledge and
belief, a true statement of the ownership,
management, etc., of the aforesaid publica-
tion for the date shown in the above cap-
tion, rendered by the Act of August 24,
1912, embodied in Section 443, Postal Laws
and Regulations, printed on the reverse side
of this form, to-wit:

1. That the names and addresses of the
publisher, editor, managing editor and busi-
ness manager are:

Publishers, American Bee Journal, Ham-
ilton, Ill.
Editor, C. P. Dadant, Hamilton, Ill.

Managing editor, G. H. Cale, Hamilton, Ill.
Business manager, M. G. Dadant, Ham-
ilton, Ill.

2. That owners are:

American Bee Journal, Hamilton, Ill.,
owned by

C. P. Dadant, Hamilton, Ill.
H. C. Dadant, Hamilton, Ill.
V. M. Dadant, Hamilton, Ill.
C. S. Dadant, Hamilton, Ill.
L. C. Dadant, Hamilton, Ill.
M. G. Dadant, Hamilton, Ill.
Louisa G. Saugier, Hamilton, Ill.
Joseph Saugier, Hamilton, Ill.

That the known bondholders, mortgagees
and other security holders owning or hold-
ing one per cent or more of the total amount
of bonds, mortgages or other securities are:
None.

(Signed) M. G. DADANT,
Business Manager American Bee Journal.
Sworn to and subscribed before me this
twenty-third day of March, 1936.

MINNIE KING,
Notary Public.
My commission expires Nov. 18, 1937.



BEES & QUEENS

Code price.

10% books your order.
Add 10c plus postage for parcel post
packages.

15% discount to Dealers.

J. W. DI LULLO Anderson, Calif.

Crop and Market Report

COMPILED BY M.G. DADANT



For our May crop and market report, we asked reporters to answer the following questions:

1. How much winter loss of bees?
2. How are they building up?
3. Honey plant and crop prospects?
4. Is honey pretty well cleaned up?

Winter Loss of Bees

This is one year when care in packing and winter cellars paid good dividends.

Throughout all of the northern areas north of the Ohio River and extending to the Rocky Mountains the extremely severe weather has resulted in heavy loss of bees, particularly with the farmer beekeepers who use very little care with their bees and no winter packing. Even some of the more experienced beekeepers who have been "getting by" without packing suffered extremely severe losses. We find the losses running all the way from five to ten per cent in the case of beekeepers who had used every precaution or who had their bees in specially favorably sheltered spots up to as high as 60 to 70 per cent with unpacked bees.

Our estimate would be that the average loss would be in the neighborhood of 20 to 25 per cent throughout these northern areas.

In the southeastern sections as well as the balance of the South, the losses have been small, no larger than usual.

The Rocky Mountain area reports are conflicting. We believe the losses there will be somewhat above normal although not as excessive as in the windswept northern sections.

California and the west coast as well as Arizona and New Mexico have only had the usual small losses.

How Are Bees Building Up?

Similarly in all northern sections, bees are very slow to build up. This is due to two factors. In the first place, many clusters came through much decimated by the heavy winter and in the second place there have not been a sufficient number of bright sunny warm days, but too much cloudy weather in most areas.

We look for quite a considerable amount of "spring dwindling" in the northern areas due to the fact that the small clusters of bees coming through are old bees and there will not be sufficient to hover over the brood until the new cycles can emerge and help build up the colony by keeping the brood warm. Undoubtedly many otherwise prolific queens are going to be held down in their brood rearing from this cause.

In the Appalachian section as well as throughout the South, conditions are about normal although some of the breeding localities report that bees are not quite up to normal conditions owing to cloudy weather. However, we believe that the package shippers are in amply satisfactory shape to take care of all orders promptly unless something unforeseen in weather conditions should occur.

Where colonies did come through winter in satisfactory condition well populated with bees, the build-up is coming rapidly. However, we do not believe that the bees throughout the northern section are more than 85 per cent of normal. In southern sections they will rank practically normal as they will along the Pacific coast. In fact in central California, reports are to the effect that bees are little too far advanced.

Crop Prospects

Throughout all of that area known as the white clover area, as well as sweet clover sections and extending on into the Intermountain territory where irrigation is necessary, we find conditions at least 100 per cent and in most cases 125 per cent of normal. The white clover areas are looking for a bumper crop if weather conditions are satisfactory and sweet clover areas as well are far improved over a year ago. The mountains have stored plenty of snow so that irrigation facilities seem more than desirable.

Along the Atlantic coast extending down into the Southeast and across the South, conditions are very satisfactory, being at least 100 per cent of normal.

As we get into Texas and the western sections of the plains area, we find dry weather still continuing with the possibilities of cutting down the flow considerably.

The dry weather in California was not broken sufficiently soon so that honey plants came back to normal in sufficient time for the harvest. This being the case, it does not appear that normal conditions would apply in California this year; in fact the yield from orange does not seem to be more than 75 per cent of a year ago and sage in many instances was hurt by earlier drought.

In the Canadian provinces, similar conditions apply as in northern sections of the United States, with crop prospects unusual.

Much of the losses is being made up by package bees. Many producers are even planning for a heavy increase in numbers of bees. However, owing to the severe losses throughout the winter, we do not believe that there will be quite as many bees for the harvest as a year ago with the prospects far better so that the total crop may be far in excess of 1935 provided climatic conditions are satisfactory at the time of the yield.

Honey on Hand

In very few sections reporters stated that honey is practically all moved out of the honey producers' hands and into the hands either of the consumer or of the distributor.

Probably the largest amounts still holding are in the fall crop sections of the Central West and in California where considerable stocks are still on hand.

We believe, however, that there will be the nearest to a clean up this year that there has been in many years as most sections are reporting no honey left on hand and eagerly awaiting the new crop. All in all it looks like not quite as many bees for the harvest this year with far greater possibilities for the honeyflow. Look out for a swarming year.

BEEKEEPER'S EXCHANGE

Copy for this department must reach us not later than the fifteenth of each month preceding date of issue. If intended for classified department it should be so stated when advertisement is sent.

Rates of advertising in this classified department are seven cents per word, including name and address. Minimum ad, ten words.

As a measure of precaution to our readers, we require references of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisers offering used equipment or bees on combs must guarantee them free from disease, or state exact condition, or furnish certificate of inspection from authorized inspector. Conditions should be stated to insure that buyer is fully informed.

BEES AND QUEENS

ITALIAN Queens. Northern bred, for Northern conditions.
Eugene Gordon, Hershey, Nebraska.

THREE-BANDED Italian bees and queens for 1936. Write for prices. Alamance Bee Company, Geo. Elmo Curtis, Mgr., Graham, North Carolina.

CARNIOLAN & ITALIAN BEES & QUEENS
Tested \$1.50, untested 75c. Write for prices on bees.
Mrs. C. B. Bankston, Buffalo, Texas.

CAUCASIANS — Young laying queens 75c. Millers Caucasian Apiaries, Whitsett, Texas.

PACKAGE BEES SPECIAL — Italian bees with pure Caucasian queen, 2-lb. pkg. \$2.45; 3-lb. pkg. \$3.15; 5-lb. pkg. \$4.55 Express collect. Caucasian queens 75 cents each. Safe arrival guaranteed. Tillery Brothers, Greenville, Alabama.

BEST MOUNTAIN GRAY Caucasian bees and queens. Select queens 75c each; 2-pound package with queen \$2.45; 3-pound package with queen \$3.15. Full weight, safe arrival guaranteed. Book order now to reserve your shipping date.
P. B. Skinner Bee Co., Greenville, Ala.

QUEENS — You have tried others, now let us solve your queenbee problem. Our own Italian strain the result of 20 years of select breeding. First shipment of this season's queens about March 10th. Price to June 1st for guaranteed, select untested queens, 75 cents each, any quantity. Usual 15% discount to dealers.
Edson Apiaries, Gridley, Calif., Butte Co.

WE OFFER FOR 1936 the same bright yellow Italian queens, as good as any you can buy. Under marketing agreement 75 cents each, any number you buy. Satisfaction guaranteed in U. S. and Canada. E. A. Simmons Apiaries, Powell Owen, Mgr., Greenville, Alabama.

SILVER RUN QUEENS — We offer queens from the best three-banded stock we can breed or buy. Cells built in mammoth colonies. Queens mated from strong nuclei. Each queen carefully inspected before shipment. We have reared thousands of queens that have given satisfaction throughout United States and Canada, working for up-to-date southern queen and package shippers. Write for special price on number of queens you need. Our motto: Each queen an advertisement for SILVER RUN APIARIES, Route 1, Phenix City, Alabama.

GOLDEN ITALIAN QUEENS, Untested 75c each, May delivery. Tested \$1.50. Select Tested \$2.50.
Sam Hinshaw & Son, Randleman, N. C.

EXTRA YELLOW Italian Queens that produce bees a little more yellow than the three-banded; more gentle and just as good workers. Untested 75c each, starting early in May. Health certificate and satisfaction. Hazel V. Bonkemeyer, Rt. 2, Randleman, N.C.

MONEY AND TIME SAVED on express charges from Nashville, Tennessee. Lots of Packages available for May delivery. Market agreement prices. N. S. Gladish, No. 6 Hobbs Road, Nashville, Tennessee.

GOLDEN PURE ITALIAN QUEENS that produce workers very gentle to handle; good honey gatherers. I have never had any foulbrood in my apiary. Satisfaction guaranteed. 30 years a breeder. Tested \$1.50, select tested \$2.00; these ready now. Untested about May, 75c.
D. T. Gaster, Rt. 2, Randleman, N. C.

QUEENS OF QUALITY. Package Bees. Nothing but young bees. Full weight at your end of the line. Bees forwarded on date specified in your order. I have been a producer of honey for many years, as well as a shipper of bees. Give me a trial.
O. P. Hendrix, West Point, Mississippi.

PACKAGE BEES WITH QUEEN INTRODUCED eliminates loss of queens. Our folder tells about them.
A. O. Smith, Mount Vernon, Indiana.

CAUCASIAN BEES AND QUEENS for May. Write for free booklet which describes our bees and quote prices.
Bolling Bee Co., Bolling Alabama.

"SHE-SUITS-ME" line-bred Italians, season 1936. One untested queen \$1, six queens \$5. Ready May 20.
Allen Latham, Norwichtown, Connecticut.

CAUCASIANS — Hardy northern, gentle, prolific young queens June 1. No packages. Booklet. Agreement prices.
Bird's Apiaries, Odebolt, Iowa.

ITALIANS BETTER THAN THE BEST yet cheap as the rest. Try them for comb honey. Untested queens ready June 1st, 50¢ each. M. P. Ilgenfritz, Jr., Castleton, Md.

HONEY FOR SALE

FOR SALE — Northern white extracted and comb honey.
M. W. Cousineau, Moorhead, Minn.

CHOICE Michigan Clover Honey. New 60's. David Running, Filion, Michigan.

HONEY FOR SALE — Any kind, any quantity. The John G. Paton Company, 230 Park Avenue, New York.

FOR SALE — Well ripened clover honey, car lot or local shipments. Will be pleased to submit sample. THE COLORADO HONEY PRODUCERS' ASSN., 1424 Market St., Denver, Colorado.

FANCY CLOVER and fall honey.
Kalona Honey Co., Kalona, Iowa.

A CAR of sweet clover honey.
George Seastream, Moorhead, Minn.

FOR SALE — Fine grade light amber bulk comb honey.
Hyde Bros., New Canton, Ill.

HONEY PACKERS — Write us for prices and samples on California and Western honeys. We stock all varieties. HAMILTON & COMPANY, 108 West Sixth Street, Los Angeles, California.

FOR SALE — Extracted honey in new 60's. H. Blitz, P.O. Box 3438, Philadelphia, Pennsylvania.

SWEET CLOVER HONEY. Case or carload. Sample 10c. Sturdevant, St. Paul, Nebr.

HONEY AND BEESWAX WANTED

WANTED — Extracted Honey. Send sample and price delivered to T. W. Burleson & Son, Waxahachie, Texas.

WANTED — Capping melter or dark grade honey. Edw. Klein, Gurnee, Ill.

WANTED — Car lots honey; also beeswax, any quantity. Mail samples, state quantity and price. Bryant & Cookingham, Inc., Los Angeles, Calif.

WANTED — White and Light Amber Honey. Carlots or less. Clover Blossom Honey Co., 712 Kossuth St., Columbus, Ohio.

HIGHEST CASH PRICE for your beeswax. Write for my high prices and shipping tags before disposing of your wax.
Walter T. Kelley Co., Paducah, Ky.

WANTED

WANTED — Experienced bee man with clean habits; state age, wages and references. Room and board furnished.
John Kneser, Hales Corners, Wis.

WANT YOUNG MAN — Some experience in commercial beekeeping. Inspect, extract and drive truck. Prefer non user of tobacco.
C. I. Graham, Colusa, Calif.

FOUNDATION MILLS for thin section, also medium brood. W. Abbott, Exeter, Ontario.

FOR EXCHANGE

DESIRE TO EXCHANGE "L'apiculteur" for "American Bee Journal" and pleased to correspond with American beekeepers. Cadierges, 4 Rue Michel Colombe, Tours, France.

FOR SALE

FOR SALE OR TRADE — Comb honey supers. Reinhold Wegner, Fairmont, Minn.

FOR SALE — Bees in hives, guaranteed no disease. Geo. Schilling, State Center, Iowa.

FOR SALE — 20 ten-frame hives, 20 deep supers with combs, 45 shallow supers with combs. No disease.
Howard Zieman, Royal, Iowa.

FOUR-FRAME REVERSIBLE extractor 9½ inch pockets. New Roots No. 4325. 4327—12 inch pockets Power.
Willis Closs, York, N. Y.

BARGAIN — GLASS JARS — 200 cases 2 dozen Fluted glass jars, capacity 3½ oz. honey, with screw caps, at 33c per case.
Dadant & Sons, Hamilton, Illinois.

SUPPLIES

BEST QUALITY bee supplies, attractive prices, prompt shipment. Illustrated catalog on request. We take beeswax in trade for bee supplies. The Colorado Honey Producers' Association, Denver, Colo.

BEST QUALITY soft white pine Hoffman frames \$30.00 per thousand. Complete line of bee supplies manufactured by us. All prices the lowest. Free catalog.
The Walter Kelley Co., Paducah, Ky.

WIRED FRAMES — Shipped k. d.; nail up perfectly, no warped combs. Let us prove it. Discount on trial order. Catalog free.
A. E. Wolkow Co., Hartford, Wis.

PORTER BEE ESCAPES save honey, money, avoid stings; faster most efficient. Sample 15c. R. & E. C. Porter, Lewistown, Ill.

SAVE QUEENS. Safin cages now 15c. Ten for \$1.00.
Allen Latham, Norwichtown, Connecticut.

DIFFERENT, that's all. Written and published for the instruction of beekeepers. 52 pages of breezy entertaining beekeeping comment each month. One year, \$1.00; two years, \$1.50. Sample, 3c stamp.
The Beekeepers Item, San Antonio, Texas.

FOR SALE — Queen mailing cages. Material, workmanship and service all guaranteed. Write for quantity prices.
Hamilton Bee Supply Co., Almont, Mich.

QUALITY BEE SUPPLIES. Prompt shipment. Reasonable prices. We take honey and beeswax in trade for bee supplies.
The Hubbard Apiaries, Onsted, Michigan.

THE PINARD nailless shipping cage. Agents Diamond Match Company, Chico, California; Weaver Apiaries, Navasota Texas. Send for samples. A. B. Pinard, 810 Azuerais Avenue, San Jose, California.

YOUR WAX WORKED into plain medium brood foundation for 15c pound; thin super, 22c. Fred Peterson, Alden, Iowa.

FOR SALE—Comb foundation at reduced prices. Plain, wired and thin section. Wax worked at lowest rates.

E. S. Robinson, Mayville, N. Y.

STRAW SKEP BEEHIVES for ornamental gardens. Photos on request.

G. Korn, Berrien Springs, Mich.

DAIRY GOATS

DAIRY GOAT JOURNAL, Dept. 601, Fairbury, Nebraska. Monthly magazine, 25c yearly, 5 months 10c.

MISCELLANEOUS

THE BEE WORLD—The leading bee journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy, post free, 12 cents stamps. Membership of the Club, including subscription to the paper, 10/6. The Apis Club, Brockhill, London Road, Camberley, Surrey, England.

PLANS FOR POULTRY HOUSES—All styles; 150 illustrations. Tells you the type to build for your particular locality. Secret of getting winter eggs, and copy of "Inland." Send 25c.

Inland Poultry Journal, Spencer, Indiana.

TRAP YOUR SWARMS automatically while you fish. Circular free.

Vikla Mfg. Co., Lonsdale, Minnesota.

RINGNECK PHEASANT EGGS. From selected breeding stock. Booking orders for eggs April, May and June deliveries. August Lotz Company, Boyd, Wisconsin.

Goldenrod for Rubber

A clipping, sent to us by Alfred Pering of Florida, tells of rubber tests from rubber out of goldenrods, started by the late Thomas Edison and being carried on by Harry G. Ukkleberg in Florida.

Only the leaves and stems are used for rubber from this plant. Mr. Ukkleberg sees a new day for farmers in producing rubber from goldenrods. He says the goal is already in sight. Goldenrod plants yielding 12 per cent rubber have already been developed. All that remains is to obtain seeds from the improved strains.

"I see no reason why goldenrods could not be grown in the southern states to produce at least part of the rubber used in this country. The United States uses 70 per cent of the world's rubber and produces none of it. It would be easier to do without wheat or cotton."

"After a field has once been planted, there is very little replanting," says Ukkleberg. "Each year a new crop will spring up from the stubble left by the harvester. I see no reason why goldenrod could not be grown as far north as Tennessee and through the cotton belt but I do not think it would be successful farther north."

Mr. Pering comments: "Specimens of goldenrod, just a few bunches here on my lot, have grown as high as twelve feet. How would you like the smell from an apiary located alongside an acreage large enough to be harvested for rubber making?"

Package Bees and Queens

By Pound, Ton or Car.

Service - Satisfaction

Trade Agreement Prices. Write for particulars.

VICTOR APIARIES :: KYLE, TEXAS

ITALIAN

BEES AND QUEENS

"Good or Made Good"

ALONZO MCKAY

RT. 1, VICKSBURG, MISSISSIPPI.

Inquiries cheerfully answered.

Opportunity

OPPORTUNITY knocks at every man's door often, but seldom tarries if the door remains closed. Opportunity is a shy fellow. He stands with us all the time just waiting for us to show a spark of energy. If that spark appears he shoves so many chances in our way that half the time we are stumbling over them because we are afraid to look. Nothing ventured, nothing gained, is his first motto. His other motto is—keep your eyes open and your wits moving, and you can grab at least one peach every day.

OPPORTUNITY now knocks at the door of the American bee-keeping industry and offers the most important factor of success that has ever been presented—a national cooperative plan that will return hundreds of dollars for every dollar invested. This plan that has proved itself by increasing the per capita consumption of honey from one to one and a half pounds in five years.

The plan has worked so successfully that, instead of there being a surplus of honey in the early part of 1936, there is actually not enough to fill the demand. If this plan is continued an additional 50 million pounds of honey will be required to fill the demand.

Complete proof is available to show that **American Honey Institute** has actually produced these results.

A courageous and opportunity-minded group of beekeepers has made possible the success of this plan. But others are needed to help in carrying this opportunity to far greater heights in securing a per capita consumption of honey equal to five or even ten pounds, if the honey can be produced.

Help make it possible to increase your business and your income by taking part in this great economic battle. It means increased prosperity to every beekeeper in America.

AMERICAN HONEY INSTITUTE is your opportunity. It knocks at your door—keep that door closed and you will find a surplus of honey stored in your honey house every year with no market available. Open the door—let opportunity in and your ability will be taxed to produce enough honey to supply the market.

Fill out the coupon below—make your pledge for 5 years. Give your support to the greatest national advertising plan ever developed for honey.

AMERICAN HONEY INSTITUTE,
MADISON, WISCONSIN.

I pledge \$ _____ annually for 5 years to the American Honey Institute as my share of a National Honey Advertising Campaign.

Signed _____

Address _____



Better Bred Queens Three-Banded ITALIANS

We are prepared to handle your rush orders. Don't hesitate to send them to us. Raising queens and shipping packages is our only business. Not a side-line. We have left no stone unturned to give you the best queens obtainable and good honest, well prepared packages. Give us a trial and be among our many satisfied customers.

PRICE FOR UNTESTED, SELECT QUEENS	\$.75
TWO-POUND PACKAGES WITH QUEEN	\$2.45
THREE-POUND PACKAGES WITH QUEEN	\$3.15
FOUR-POUND PACKAGES WITH QUEEN	\$3.85

Dealers wanted in all localities.

Dealer's discount, 15%.

CALVERT APIARIES, Calvert, Alabama

PLAIN -- FOUNDATION -- SURPLUS

*The Kind
You Love
To See*

DADANT & SONS . . . HAMILTON, ILLINOIS

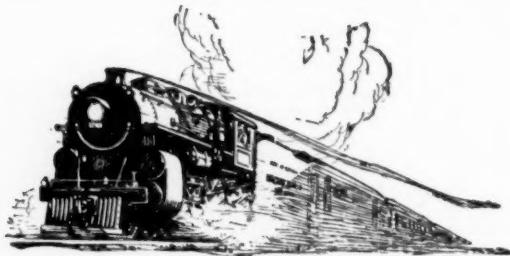
Even cells, smooth sheets. Pure beeswax—clean, yellow and beautiful.

And a sweet hive-like odor that instantly makes friends with the bees.

If you wire your own frames, Dadant's Plain Foundation will be found ideal to use.

For well filled sections, that grade high, Dadant's Surplus Foundation has been chosen by experts for fifty years. It makes a beautiful center for the hive's choicest product.

SUPERIOR California Bees and Queens



Most Northern Shippers in California

Safe Arrival and Satisfaction. Lower express rates to north and northwest.

"Quality" None Better. Circular on request.

TRADE AGREEMENT PRICES

	April 1st	to May 31st	June 1st to October 31st
Any number			
Select Untested Queens	\$.75 each	\$.50 each	
2-Pound Package with Queen	2.45 each	1.95 each	
3-Pound Package with Queen	3.15 each	2.55 each	
Each Additional Pound of Bees	.70 each	.60 each	
For Queenless Packages take away price of Queens.			

BANTA & WIRE

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REDDING, CALIFORNIA

Honor Roll



EXPLANATIONS ON THE HONOR ROLL—

Honor Roll covers memberships received during the period of January 1, 1935 and December 31, 1935.
*Indicates those members received through the Free Queen Offer made by the Stover Apiaries, Mayhew, Mississippi.

Iowa (continued)

Swanson, F. L., Council Bluffs	5.00
Wallen, Ivar, Otho	1.00
Wenger, J. Lloyd, Dallas Center	1.00

Kansas

Allen, Arthur, Highland	\$10.00
*Claycamp, Howard, Strawn	1.00
Dean, E. F., 2500 Ohio Ave., Topeka	1.00
Edson, W. H., 522 S. Cherry, Olathe	1.00
Elias, Hubert, Atchison	1.00
Humphrey, J. H., Sabetha	5.50
Life, J. C., Haysville	.25
Nelson, T. H., Haysville	1.00
Plymate, Clay, Augusta	1.00
Shockley, F. H., Rt. 6, Wichita	.25
Stewart, H. W., Highland	3.50
Yost, Mr. & Mrs. P. E., Hesston	1.00

Kentucky

Kelley, Walter T., Paducah	\$12.00
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Louisiana

Anderson, W. E., State Apiary Inspector, Baton Rouge	\$ 4.50
Bernard & Bejaean Apiarists, Atchafalaya	5.00
Bernell, R. L., Rt. 4, Box 184, New Orleans	5.00
Bessonnet, E. C., Donaldsonville	1.00
Bohne, George, Luling	12.50
Bourg, Gilbert (Gulf Coast Bee Co.), Houma	5.00
Cloverland Apiaries, Hamburg	5.00
Crowville Apiaries (J. J. Scott), Winnboro	5.00
Garon Bee Company, Donaldsonville	13.00
Hidalgo, Robert (Garon Bee Co.), Donaldsonville	1.00
La. State Beekeepers' Assoc., E. C. Bessonnet, Sec.-Treas., Donaldsonville	9.60
Mauldin, G. L., Box 26, Good Hope	1.00
McKnight, C. T., Shreveport	1.00
Oertel, Everett, Baton Rouge	5.00
Overby Apiaries, Leonville	10.00
Red Stick Apiaries & Co., Montegut	5.00
Scott, J. J. (Crowville Apiaries), Winnboro	10.00
Spoerri Apiaries (Rudolf Spoerri), St. Bernard	5.00
Stevenson, M., Gretna	5.00
St. Romain, J. Lloyd, Hamburg	5.00
*Wenzel, O. J., Mansford Plantation, Box 696, Tallulah	1.00
Whitecomb, Warren W. (Bee Culture Laboratory), Baton Rouge	10.00

Maryland

Ilgenfritz, M. P. Jr., Castleton	\$1.00
Reddick, Clarence W., Walkersville	1.00
Stidman, Albert C., Owings Mills	1.00

Massachusetts

Gurney, Russell, 17 Winneperkit Ave., Lynn	\$1.00
Hathaway, Matthias, Box 263, Mattapoisett	2.55
Klempa, Hugh L., Ludlow	1.00
Laughton, A. A., 21 Wallinford Ave., Athol	1.00
Luttrell, V. K., Duxbury	1.00
Twing, Edward A., Monterey	3.00
Van de Poele, John, West Abington	1.00

Michigan

Abbott, Charles, Deckerville	\$.50
Abbott, Frank, Palms	\$.50
Ahler, W. B., Muskegon	\$.50
Albaugh, Harold, Gowen	\$.50
Aldrich, F. H., Tuscola	\$.50
Aldrich, Lynn, Pickford	\$.50
Andrews, Graydon, Nashville	\$.50
Anmaler, John (care of C. M. Elzinga), Hudsonville	\$.50
Appledoorn, Wm., Rt. 7, Holland	\$.50
Atkinson, K. W., Casnovia	\$.50
Appold, L., Sebewaing	\$.50
Avery, Lewis B., Rt. 1, Clinton	1.00
Barger, L. E., Charlotte	\$.50
Barnard, C. H., Holland	\$.50
Barnes, C. E., Hastings	\$.50
Barnes, E. C., Rt. 1, Adrian	\$.50
Barrett, Don P., Dep't Ag., Lansing	5.50
Bartlett, Ira, East Jordan	1.50
Bauer, George, Rt. 1, Fairgrove	\$.50
Beck, Maynard, St. Johns	10.50
Beckwith, Hubert, Milford	5.00
Benton, Fred, Belding	\$.50

This Honor Roll occupies several pages and will be continued in the June number. If your state is not included above, therefore, look for it in March or later issues. If any name is misspelled or if any name is omitted, please write at once to either the American Bee Journal or to American Honey Institute, Madison, Wisconsin.

THIS SPACE CONTRIBUTED BY DADANT & SONS, HAMILTON, ILL.

The Postscript

GOSSIP ABOUT THE OFFICE
IN THE MAKING OF THE MAGAZINE



Considerable newspaper comment has recently been made on the change of name of the Boston ball club. Instead of calling themselves the Braves and their headquarters the Wigwam, they are now known as the Bees and their park the Hive.

ABJ

Brother Frederick, of Techny, Illinois, has observed that when the hive on scales gains a pound an hour from noon to three o'clock, the colony usually gains eight to ten pounds for the day. During the latter part of last July it was different. Then he noticed that in days when the scale hive made such a gain in early afternoon, the colony only gained about two pounds for the day. In an abnormal season like the last one, all rules fail. Apparently they were getting mostly water last summer when the honeyflow should have been at its best, and the season closed a near failure in many localities.

ABJ

Reports indicate that last fall's honeyflows were local and erratic. Some Illinois localities reported good crops from heartsease or smartweed in late autumn, while others but a short distance away got nothing even though there was much of the plant in bloom.

ABJ

With reference to my mention of a museum of bee-keeping equipment on this page, George H. Rea writes that they have such a museum at Cornell University and have the first extractor and uncapping knife made by Moses Quinby along with numerous other items of historical interest. It is highly desirable that such interesting relics be saved and let us all be on the watch for things which should be preserved there.

ABJ

After a light frost had killed the banana trees in south Texas the past winter I found that the dried fibre made a splendid smoker fuel. It is very similar to corn stalks in its nature, but when twisted into a hard form and pushed down into the smoker it served very well. It made a dense smoke and lasted longer than one would expect. It makes me want to try corn stalk to see whether it can be made to do as well. The dried stems of the palm leaves also makes good smoke and lasts well.

ABJ

The Iowa Beekeepers' Association is planning to hold the summer meeting at Pellett Gardens, Atlantic, Iowa, probably sometime in July. The things I am most proud of there are the farm babies, Norman and his sister Eloise. Probably the visiting beekeepers will be more interested in the apiary where the disease experiment is carried on.

ABJ

Wm. Mosteller, of Casper, Wyoming, asks if two queens in a hive, one above another are good. Why stop at that? Would not ten or twelve be better? With a step ladder and a derrick one could conserve space on the same plan as the city skyscrapers.

Nature seems to make a very effective limit to the size of a colony of bees in the productive capacity of one queen. Since separate compartments are necessary if more than one is used, it is certainly more convenient for the beekeeper to keep them in different hives rather than in separate units of the same one.

ABJ

Mr. Mosteller also raises the question as to whether poison may not sometimes be responsible for the short life of some of the queens so quickly superseded after coming from the South. There is no question but what many bees are killed by the dusting of cotton, but this is the first time I have heard the suggestion that it may have an influence on queen supersedure after the bees have been shipped to distant points.

There has been great deal of guessing as to the cause of the premature supersedure and it seems very probable that several causes may be worthy of consideration.

Practical men of the Mosteller type certainly suggest things worth thinking about.

ABJ

At the banquet of Iowa Vegetable Growers held recently at Forest City, the menu was composed largely of horticultural products. The dessert was baked apple with honey and whipped cream. Here is a tip for the Honey Institute. If we recommend baked apple with honey for dessert we may well expect the apple growers to become enthusiastic. Reports indicate that there is need for more information on the part of most cooks as to the proper method of preparation of the apple and honey combination. Our thanks to secretary C. L. Fitch for remembering the honey.

ABJ

A note of appreciation is due to the members of the staff of the Texas experimental sub-station with whom I was so pleasantly associated during the past winter. They are a fine bunch of fellows working in a very pleasant environment. S. W. Clark, entomologist at the Weslaco station, is an enthusiastic beekeeper and we tackled numerous problems together. During the time that Dr. Park was here we had regular sessions in the station laboratory discussing bees.

ABJ

A Missouri beekeeper, whose bees have robbed out a diseased colony, asks whether there is any hope that they may escape infection or whether he should clean them up at once without waiting for the disease to develop. Personally I would not destroy a healthy colony of bees because it had robbed the honey from a diseased colony. Although there is a good chance that disease may develop, it is by no means sure that it will do so. One should keep close watch and be prepared for prompt action when disease does appear however.

ABJ

A Canadian reader asks where seed of the Grundy County early sweet clover can be secured. Large quantities of this sweet clover seed has been grown for sale by Grundy County farmers for years past. Write to the County Farm Bureau at Morris, Illinois, for information concerning it.

ABJ

A correspondent who is looking for a location in which to establish himself in the business of honey production wants to know of a place which is dependable. In my opinion the only certain thing about beekeeping is its uncertainty. Several places that I have visited which were formerly regarded as outstanding locations, no longer provide good crops and many of the beekeepers have moved to other more promising places.

ABJ

Everything appears to move in cycles and beekeeping is no exception. A location which yields big crops for a few years is likely to have years of failure or short crops. Epidemics of disease are followed by years when disease is very mild or disappears altogether. In our locality we have white clover and dandelions in the greatest abundance for several years in succession, only to have both decline until they are of little importance for the bees. Sweet clover seems to be following a similar cycle and in many places where it held so high a place a few years ago it is suffering a great decline now.

ABJ

Fortunately the beekeeper has many sources of harvest and there is usually something for the bees. Although his harvest is often small the beekeeper usually fares as well as his neighbors on the average of a ten year term. Beekeeping is more adaptable than other farm enterprises and a move of a few miles will often correct a bad pasture situation.

FRANK C. PELLETT.